United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with United States Department of the Interior, Bureau of Indian Affairs; Colville Confederated Tribes; and Washington State University, Agriculture Research Center

Soil Survey of Colville Indian Reservation, Washington,

Parts of Ferry and Okanogan Counties

How to Use This Soil Survey

General Soil Map

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

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

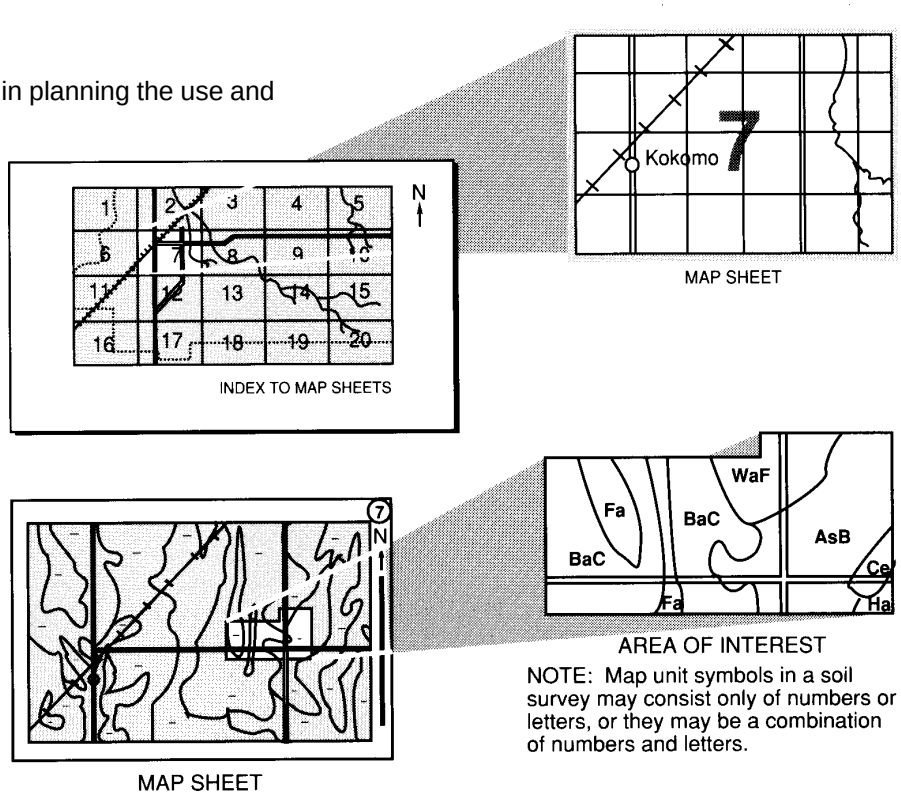
Detailed Soil Maps

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

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

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

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



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

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

Major fieldwork for this soil survey was completed in 1985. Soil names and descriptions were approved in 1987. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1987. Tables 4, 5, 7, and 12 through 22 were generated in 2001 from the most current data stored in the National Soil Information System (NASIS) database. The properties and criteria used to develop the soil interpretations and ratings in tables 6, 8, and 9 were developed by local resource specialists. These criteria and ratings have not been reviewed or approved by the National Cooperative Soil Survey. For more information on these interpretations, criteria, and ratings, contact the resource specialists at the headquarters of the Colville Confederated Tribes. Tables 10 and 11 were developed locally from data collected during the survey.

This survey was made cooperatively by the Natural Resources Conservation Service and the Bureau of Indian Affairs; Colville Confederated Tribes; and Washington State University, Agriculture Research Center. The survey is part of the technical assistance furnished to the Colville Confederated Tribes and the Ferry County and Okanogan County Conservation Districts.

Since the publication of this survey, more information on soil properties may have been collected, new interpretations developed, or existing interpretive criteria modified. The most current soil information and interpretations for this survey are in the Field Office Technical Guide (FOTG) at the local Natural Resources Conservation Service field office. The soil maps in this publication are in digital form. The digitizing of the maps is in accordance with the Soil Survey Geographic (SSURGO) database standards. The digital SSURGO-certified maps are considered the official maps for the survey area and are part of the FOTG at the local Natural Resources Conservation Service field office.

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: View of the southern extent of the Okanogan Highlands, from Cache Creek Road. Owhi Flat is in foreground.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation home page on the World Wide Web. The address is http://www.nrcs.usda.gov (click on "Technical Resources").

Contents

Issued 2002

Foreword

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

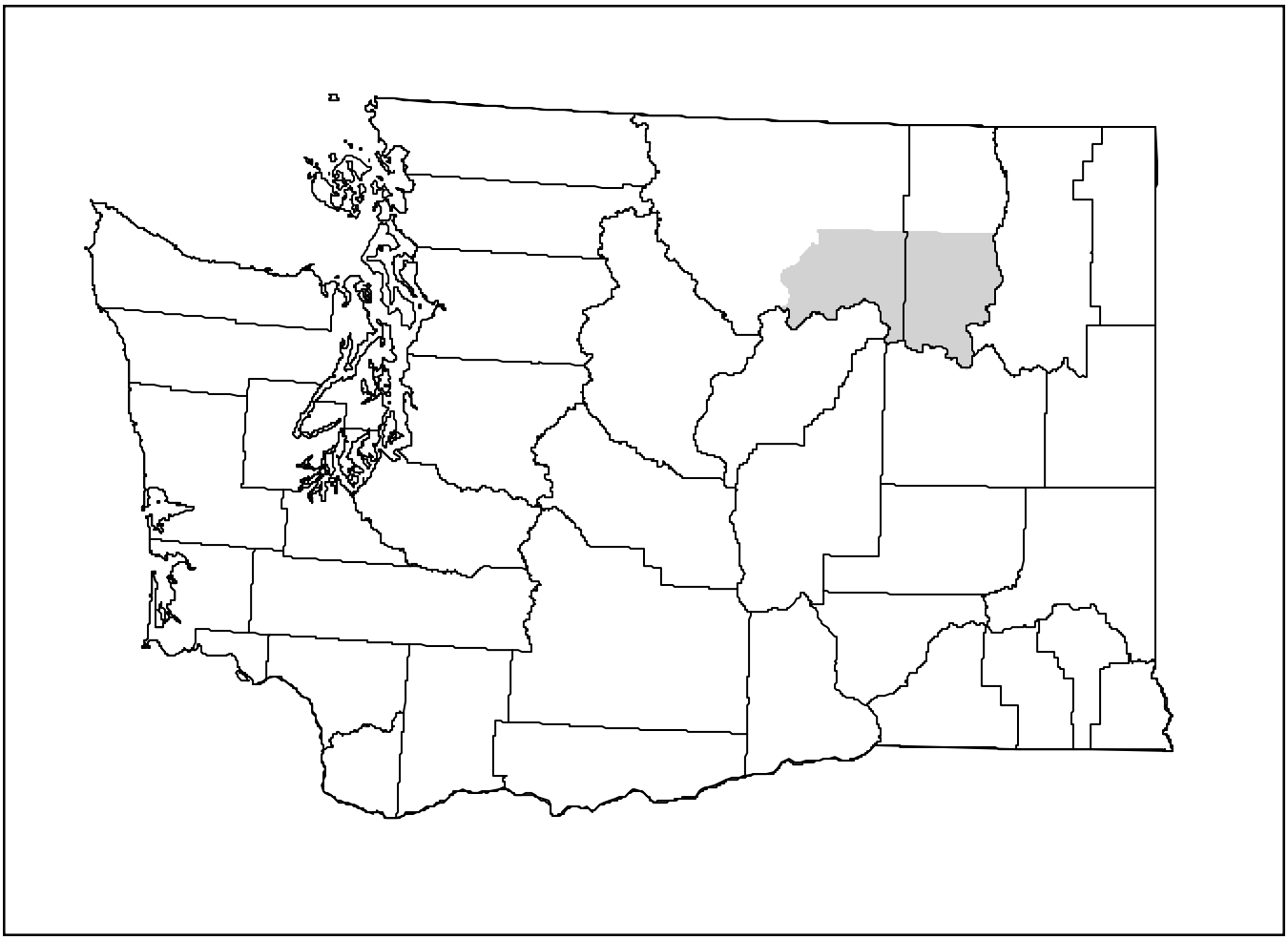
This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use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

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

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

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

Raymond L. Hughbanks
State Conservationist
Natural Resources Conservation Service



Location of Colville Indian Reservation in Washington.

Soil Survey of
Colville Indian Reservation, Washington,
Parts of Ferry and Okanogan Counties

By Steven B. Campbell and Terry L. Aho, Natural Resources Conservation Service

Soils described and mapped by Steven B. Campbell, Steven G. Rolph, Charles S. Natsuhara, Sanderson Page, Joseph T. DeFrancesco, Thomas A. Fait, Vern E. Beieler, Terry L. Aho, Dale L. Olson, and Norman Donaldson, Natural Resources Conservation Service, and Walter C. Hunner, Colville Confederated Tribes

Forest productivity assistance provided by Timothy Leadingham, Bureau of Indian Affairs, and Michael Cloughesy and Valerie Dillon, Colville Confederated Tribes

Range and forest understory assistance provided by Marc A. Pointel and Kevin J. Hanley, Natural Resources Conservation Service, and Brian W. Frith, Colville Confederated Tribes

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
the Department of the Interior, Bureau of Indian Affairs; Colville Confederated Tribes; and Washington State University, Agriculture Research Center

Colville Indian Reservation is in the north-central part of Washington. The total area is about 2,127 square miles, or 1,361,232 acres. About 902,450 acres are forestland, 436,105 acres are rangeland, 15,775 acres are nonirrigated cropland, 5,540 acres are irrigated cropland, and 1,360 acres are residential, commercial, or industrial land (USDI, 1981). The total population of the area is about 7,400, of which about 52 percent are Indian tribal members. The principal towns are Nespelem (tribal headquarters), Inchelium, East Omak, Keller, and Coulee Dam.

The survey area is bordered on the east and south by the Columbia River, on the west by the Okanogan River, and on the north by the township line common to townships 34 and 35, north of the Oregon baseline. It is approximately 70 miles across the survey area from east to west and 24 to 43 miles from north to south.

Soil scientists have identified about 178 different kinds of soils in the survey area. These soils vary in texture, depth, rock fragment content, and natural drainage. The soils on hills and mountains are suited mainly to timber production, livestock grazing, wildlife habitat, and recreation. The soils on terraces and plateaus are suited to these uses as well as cropland and building site development.

General Nature of the Survey Area

This section provides general information about the survey area. It discusses history and development, physiography and relief, geology, drainage and water supply, and climate.

History and Development

Prior to the 1850's, nomadic Indian tribes that subsisted by following seasonal sources of food occupied the survey area. They gathered roots and berries in spring, fished for salmon in summer, and hunted for game in fall. The people of these tribes belonged to the Plateau Culture (Raufer, 1966).

The first contact the Indians had with other people was with the fur traders and trappers in the late 1700's. In 1811 the American Fur Company established the first trading post at Fort Okanogan, on the Columbia River near the mouth of the Okanogan

River. Relations with the traders and trappers began to alter the nomadic culture of the Indians.

In the 1830's, Jesuit missionaries came to the area and established missions and schools. The missionaries often acted as intermediaries to maintain peace between the Indians and the other inhabitants.

In the 1840's, miners, lumbermen, and others came into the area in increasing numbers, further encroaching on the Indians' territory. This created conflicts, but they generally were less serious than in other areas because of the peaceful nature of the local tribes and the efforts by the Jesuit missionaries to maintain peace.

The original Colville Indian Reservation, which was 2.8 million acres, was established by an executive order by President Grant in 1872. The reservation boundaries changed many times over the next 20 years. The present boundaries, which encompass 1.36 million acres, were established in 1892. The Colville Confederated Tribes now consist of 11 bands—the Colville, Entiat/Chelan, Lake, Methow, Moses/Columbia, Nespelem, Nez Perce, Okanogan, Palouse (Palus), San Poil, and Wenatchee.

In 1905, each tribal member received an allotment of 80 acres. The remaining reservation land, except that reserved for timber production and mining, was opened for settlement by non-Indians. Legislation to restore reservation land to tribal ownership was approved in 1956, which returned 818,000 acres to the confederated tribes.

Timber production is the main economic enterprise in the survey area. The average harvest is 120 million board feet of sawlogs per year. House logs, posts and poles, and firewood are also important products of the timber industry.

Livestock production is also significant to the local economy. About 71 percent of the survey area is used for grazing, supporting approximately 13,000 head of cattle annually.

Nonirrigated grain production is the largest agricultural land use. The main irrigated crops are hay, pasture, and orchard fruit and some small grain and corn.

Physiography and Relief

Most of the survey area is in the Okanogan Highland geographic province. The remainder, which includes the Okanogan Plateau, or Timentwa Flats, in the southwestern part of the survey area, is in the Columbia Plateau geographic province. The lowest elevation, 780 feet, is at the mouth of the Okanogan River, and the highest elevation, 6,774 feet, is at the summit of Moses Mountain.

The portion of the Okanogan Highlands in the survey area is composed of two major north-south mountain ranges—the Kettle River Range and the Nespelem Range. Parts of these ranges were glaciated during the last major glacial advance. The topography in the glaciated areas is characterized by smooth, rounded mountain summits with exposed bedrock. These areas are gently sloping to steep and have weakly developed drainage patterns. The nonglaciated areas, in contrast, have narrow ridges, are sloping to very steep, and have well-developed drainage patterns.

The Kettle River Range, in the eastern part of the survey area, forms the divide between the Columbia River to the east and south and the Sanpoil River to the west. The highest peak in this range is Grizzly Mountain, with an elevation of 6,397 feet. Other prominent peaks include Cody Butte (4,764 feet), South Seventeen Mile Mountain (5,174 feet), Lynx Mountain (5,709 feet), Gold Mountain (4,686 feet), Whitestone Ridge (4,762 feet), and Johnny George Mountain (4,090 feet).

The Nespelem Range, in the central part of the survey area, forms the divide between the Sanpoil River to the east and the Columbia and Okanogan Rivers to the south and west, respectively. The highest point in this range is Moses Mountain, with an elevation of 6,774 feet. Other prominent peaks include Little Moses Mountain (5,963 feet), Omak Mountain (5,749 feet), Strawberry Mountain (5,855 feet), Keller Butte (4,831 feet), and Central Peak (4,781 feet).

The Okanogan Plateau, in the southwestern part of the survey area, represents the northernmost extension of the Columbia Plateau. Elevation ranges from 2,000 to 2,900 feet. The Okanogan Plateau is nearly level to gently sloping and is dotted by many small lakes and ponds that resulted from the glaciation.

Flood plains and terraces of recent alluvium and higher terraces of glacial outwash and glacial lake sediment flank the rivers and most of the major creeks.

Geology

The geology of the survey area is varied. The oldest rocks, which are metamorphic and sedimentary, are known as the Covada Group (Pardee, 1918). They consist mainly of phyllite, schist, quartzite, graywacke, shale, and limestone. These rocks are interbedded in a complex pattern.

The next oldest and most extensive rocks are granitic rocks of the Colville Batholith, which are throughout the survey area. The dominant rock types

are quartz monzonite, granite, granodiorite, quartz diorite, and diorite (Colville Confederated Tribes Geology Department Staff, 1984).

Volcanic rocks and related rocks form an extensive area in the central part of the survey area. These are known as the Sanpoil Volcanics, the O'Brien Creek Formation, and their intrusive equivalent, the Scatter Creek Rhyodacite (Staatz, 1964). These rocks are mainly rhyodacite, andesite, and quartz latite.

The Okanogan Plateau, in the southwestern part of the survey area, was formed by Columbia River basalt flows. These are the youngest rocks in the area.

During the last glacial advance, about 75 percent of the survey area was covered by the Cordilleran Ice Sheet (Richmond and others, 1965). As a result, deposits of glacial till, outwash, and lake sediment cover much of the area.

Many soils in the survey area have a surface mantle of volcanic ash or have a component of volcanic ash as a result of the volcanic eruptions of Glacier Peak (12,000 years ago) and Mount Mazama (7,500 years ago) (Fryxell, 1965). Many of the soils also have a component of loess.

More detailed information on the geology of the survey area is given under the heading "Formation of the Soils."

Drainage and Water Supply

The survey area is entirely within the Columbia River Watershed. Major tributaries include the Okanogan River, which forms the western boundary of the area; the Nespelem River, in the central part; and the Sanpoil River, in the east-central part. A number of secondary streams, including Hall, Stranger, Wilmont, and Ninemile Creeks, flow into the Columbia River where it forms the eastern boundary of the survey area.

Omak Lake, the largest lake, is in the western part of the survey area. It has a total area of about 3,350 acres. It is the largest saline lake in Washington. Other major lakes include North Twin, South Twin, Round, McGinnis, Buffalo, Owhi, Goose, and Soap Lakes. Numerous small saline lakes are on the Okanogan Plateau, in the southwestern part of the survey area.

Three dams in the vicinity of the survey area—Grand Coulee, Chief Joseph, and Wells Dams—impound the Columbia River. Franklin Roosevelt Lake, created by Grand Coulee Dam, makes up part of the southern border and all of the eastern border of the survey area. Rufus Woods Lake, the Chief Joseph Dam impoundment, makes up the remainder of the southern boundary. Wells Dam impounds the Columbia River along the southwestern boundary of the survey area, and it impounds the lower part of the Okanogan River to about the town of Monse.

Surface runoff from all of the interior streams totals about 417,000 acre-feet per year (USDI, 1979). High flow occurs during March through June. The Sanpoil River, the largest interior stream in the survey area, has an average flow of about 230 cubic feet per second, but the flow drops substantially during August and September. Many of the smaller streams are dry or nearly dry in summer and early in fall.

Streams provide about 60 percent of the 16,000 acre-feet of water used for irrigation (Harkness and others, 1974). The Columbia and Okanogan Rivers are the principal sources of surface irrigation water. Secondary sources include the Nespelem River and Hall, Kartar, and Stranger Creeks. The remaining 40 percent of irrigation water is provided by groundwater wells throughout the survey area.

Climate

Prepared by the Natural Resources Conservation Service, National Water and Climate Center, Portland, Oregon.

Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from data recorded at the First Order station in Spokane, Washington.

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

In winter, the average temperature is 27.4 degrees F and the average daily minimum temperature is 18.6 degrees. The lowest temperature on record, which occurred at Nespelem on January 30, 1950, is -33 degrees. In summer, the average temperature is 66.9 degrees and the average daily maximum temperature is 85.0 degrees. The highest recorded temperature, which occurred at Nespelem on August 4, 1961, is 110 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual precipitation at Nespelem is about 13.2 inches. Of this, 2.8 inches, or 21 percent, usually falls in June through September. The growing

season for most crops falls within this period. The average annual precipitation in the survey area ranges from 12 inches along the Columbia River to nearly 28 inches in the higher lying areas in the northeastern part of the area. The heaviest 1-day rainfall during the period of record was 2.20 inches at Nespelem on July 6, 1958. Thunderstorms occur on about 10 days each year, and most occur in May through August.

The average seasonal snowfall is about 24.1 inches at Nespelem, but the average seasonal snowfall is higher, commonly 40 to 50 inches or more, in the higher lying areas in the northeastern part of the survey area. The greatest snow depth at any one time during the period of record was 21 inches at Nespelem on February 8, 1949. On the average, 22 days of the year have at least 1 inch of snow on the ground at Nespelem. The heaviest 1-day snowfall on record was 10.8 inches on December 8, 1971.

The average relative humidity in midafternoon is about 50 percent (78 percent in January and 26 percent in July). Humidity is higher at night, and the average at dawn is about 76 percent (85 percent in January and 62 percent in July). The sun shines 76 percent of the time possible in summer and 32 percent in winter. The prevailing wind is from the northeast in November through January and from the south the rest of the year. Average windspeed is highest, about 10 miles per hour, in March and 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. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

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

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

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses. Soil scientists interpret the data from these analyses as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are

assembled from other sources, such as research information, production records, and field experience of specialists.

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.

General Soil Map Units

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

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

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

Range Soils on Terraces and Dunes

Number of map units: 2
Percentage of survey area: 11 percent
Slope range: Nearly level to very steep
Native vegetation: Grasses, forbs, and shrubs
Elevation: 800 to 3,000 feet
Average annual precipitation: 9 to 15 inches
Average annual air temperature: 47 to 51 degrees F
Frost-free period: 110 to 180 days
Parent material: Glacial outwash, eolian sand, and glacial lake sediment with a component of loess
Depth class: Moderately deep and very deep
Drainage class: Excessively drained, somewhat excessively drained, and well drained
Major uses: Livestock grazing, irrigated cropland, irrigated orchards at the lower elevations, nonirrigated cropland, and building site development

1. Quincy-Skaha-Pogue

Very deep, excessively drained and somewhat excessively drained, nearly level to very steep soils that formed in glacial outwash and eolian sand with a component of loess; on terraces, terrace escarpments, alluvial fans, and dunes

Setting

Location in survey area: Along the Columbia and Okanogan Rivers, in the southern and western parts of the area
Slope range: 0 to 65 percent
Major vegetation: Needleandthread, bluebunch wheatgrass, antelope bitterbrush, big sagebrush, and threetip sagebrush
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Percentage of survey area: 7 percent

Quincy Soils

Position on landscape: Terraces, terrace escarpments, alluvial fans, and dunes
Parent material: Glacial outwash and eolian sand
Typical profile:
Surface layer—loamy fine sand
Upper part of substratum—loamy fine sand and loamy sand
Lower part of substratum—coarse sand
Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained

Skaha Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash
Typical profile:
Surface layer—loamy sand
Upper part of substratum—gravelly loamy sand
Lower part of substratum—very gravelly and extremely gravelly coarse sand

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained

Pogue Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash with a component of loess in the upper part
Typical profile:
Surface layer—fine sandy loam
Subsoil—fine sandy loam
Substratum—very gravelly loamy coarse sand and extremely gravelly sand
Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained

Minor Soils

Aeneas, Cashmere, Ellisforde, Elvedere, Farrell, Peshastin, Strat, and Winchester soils on terraces and terrace escarpments; Beverly, Cashmont, and Logy soils on alluvial fans; Gooseflats soils in swales; and Okanogan soils on flood plains

Major Uses

Livestock grazing, irrigated cropland and orchards, nonirrigated cropland, and building site development

2. Owhi-Ewall-Nespelem

Very deep and moderately deep, well drained and excessively drained, nearly level to very steep soils that formed in glacial outwash, eolian sand, and glacial lake sediment with a component of loess; on terraces, terrace escarpments, and dunes

Setting

Location in survey area: Mainly in the south-central and western parts of the area
Slope range: 0 to 60 percent
Major vegetation: Bluebunch wheatgrass, Idaho fescue, needleandthread, threetip sagebrush, and antelope bitterbrush
Elevation: 1,200 to 3,000 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Percentage of survey area: 4 percent

Owhi Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash with a component of loess in the upper part
Typical profile:
Surface layer—loam
Subsoil—gravelly loam
Substratum—extremely gravelly coarse sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Ewall Soils

Position on landscape: Terraces, terrace escarpments, and dunes
Parent material: Glacial outwash and eolian sand
Typical profile:
Surface layer—loamy fine sand
Substratum—sand and gravelly sand
Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained

Nespelem Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial lake sediment with a mantle of loess
Typical profile:
Surface layer—silt loam
Upper part of subsoil—hardpan
Lower part of subsoil—calcareous silt loam
Depth class: Moderately deep (20 to 40 inches to a hardpan)
Drainage class: Well drained

Minor Soils

Fivelakes, Haley, Hobohill, Picard, Poween, and Winthrop soils on terraces and terrace escarpments; Ahtanum soils on flood plains; Conconully and Disautel soils on hills and mountains; Emdent soils in swales; Rebecca soils on alluvial fans, and Wannacott soils on plateaus

Major Uses

Livestock grazing, nonirrigated cropland, and building site development

Range Soils on Glaciated Hills and Plateaus

Number of map units: 3
Percentage of survey area: 17 percent
Slope range: Nearly level to very steep
Native vegetation: Grasses, forbs, and shrubs
Elevation: 800 to 3,000 feet
Average annual precipitation: 9 to 16 inches
Average annual air temperature: 47 to 51 degrees F
Frost-free period: 110 to 180 days
Parent material: Glacial till and material weathered from granitic rock and basalt with a mantle or component of loess and volcanic ash
Depth class: Very shallow to deep
Drainage class: Well drained
Major uses: Livestock grazing, nonirrigated cropland, wildlife habitat, and building site development

3. Malott-Rock outcrop-Couleedam

Deep and shallow, well drained, nearly level to very steep soils that formed in glacial till and colluvium derived from granitic rock with a mantle or component of loess, and Rock outcrop; on glaciated hills

Setting

Location in survey area: Along the Columbia and Okanogan Rivers, in the south-central and western parts of the area
Slope range: 0 to 70 percent
Major vegetation: Bluebunch wheatgrass, Sandberg bluegrass, needleandthread, Wyeth eriogonum, big sagebrush, threetip sagebrush, and antelope bitterbrush
Elevation: 800 to 2,200 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Percentage of survey area: 6 percent

Malott Soils

Position on landscape: Glaciated hills
Parent material: Glacial till with a mantle of loess
Typical profile:
Surface layer—very fine sandy loam
Upper part of subsoil—very fine sandy loam
Middle part of subsoil—gravelly sandy loam
Lower part of subsoil—hardpan
Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained

Rock Outcrop

Kind of rock: Granitic rock and gneiss

Couleedam Soils

Position on landscape: Glaciated hills
Parent material: Colluvium derived from granitic rock with a component of loess
Typical profile:
Surface layer—very stony sandy loam
Subsoil—very gravelly sandy loam
Bedrock—hard granite
Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained

Minor Soils

Cashmere, Farrell, and Peshastin soils on terraces and terrace escarpments; Heytou, Roosevelt, Soaplake, and Stubblefield soils on hills and mountains; and Cashmont soils on alluvial fans

Major Uses

Livestock grazing and wildlife habitat, and nonirrigated cropland on the Malott soils

4. Timentwa-Bakeoven

Deep and very shallow, well drained, nearly level to very steep soils that formed in basaltic glacial till and material weathered from basalt with a mantle or component of loess and volcanic ash; on glaciated plateaus

Setting

Location in survey area: Basalt plateau in the southwestern part of the area
Slope range: 0 to 65 percent
Major vegetation: Bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, and threetip sagebrush
Elevation: 1,800 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Percentage of survey area: 5 percent

Timentwa Soils

Position on landscape: Glaciated plateaus

Parent material: Basaltic glacial till with a mantle of loess and volcanic ash
Typical profile:
Surface layer—loam
Upper part of subsoil—gravelly loam
Middle part of subsoil—cobbly sandy loam
Lower part of subsoil—hardpan
Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained

Bakeoven Soils

Position on landscape: Glaciated plateaus
Parent material: Material weathered from basalt with a component of loess
Typical profile:
Surface layer—very cobbly silt loam
Subsoil—very cobbly silt loam
Bedrock—basalt
Depth class: Very shallow (4 to 10 inches to bedrock)
Drainage class: Well drained

Minor Components

Achimin soils on hills and mountains; Colockum, Duleylake, and Emdent soils in swales; Haley, Nespelem, and Picard soils on terraces and terrace escarpments; and Rock outcrop

Major Uses

Nonirrigated cropland and building site development on the Timentwa soils, and livestock grazing

5. Conconully-Rock outcrop-Swakane

Moderately deep and shallow, well drained, nearly level to very steep soils that formed in glacial till and material weathered from granitic rock with a omponent of loess and volcanic ash, and Rock outcrop; on glaciated hills

Setting

Location in survey area: Mainly in the south-central and western parts of the area (fig. 1)
Slope range: 3 to 70 percent
Major vegetation: Bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, threetip sagebrush, antelope bitterbrush
Elevation: 1,400 to 3,000 feet
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Percentage of survey area: 6 percent

Conconully Soils

Position on landscape: Footslopes and backslopes of glaciated hills
Parent material: Glacial till with a component of loess and volcanic ash
Typical profile:
Surface layer—stony fine sandy loam
Subsoil—gravelly fine sandy loam
Substratum—dense glacial till
Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Rock Outcrop

Kind of rock: Granitic rock and gneiss

Swakane Soils

Position on landscape: Ridges, shoulders, and backslopes of glaciated hills
Parent material: Material weathered from granitic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—cobbly loam
Substratum—extremely gravelly sandy loam
Bedrock—hard granite
Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained

Minor Soils

Achimin, Disautel, Ginnis, Tyee, Vanbrunt, and Wynhoff soils on hills and mountains, Colockum soils in swales, Rebecca soils on alluvial fans, and Cumulic Haploxerolls along drainageways

Major Uses

Livestock grazing, and nonirrigated cropland on the Conconully soils

Range Soils on Nonglaciated Hills

Number of map units: 1
Percentage of survey area: 3 percent
Slope range: Nearly level to very steep
Native vegetation: Grasses, forbs, and shrubs
Elevation: 1,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Parent material: Material weathered from granitic rock with a component of loess
Depth class: Shallow and moderately deep
Drainage class: Well drained
Major uses: Livestock grazing and wildlife habitat, and nonirrigated cropland on the moderately deep soils

Figure 1.—Typical area of general soil map unit 5. Conconully soils are in foreground and on midslopes in background, Cumulic Haploxerolls are in center along the drainageway, and Swakane soils and Rock outcrop are on the steeper slopes in background.

6. Tyee-Ginnis-Morical

Shallow and moderately deep, well drained, nearly level to very steep soils that formed in material weathered from granitic rock with a component of loess; on nonglaciated hills

Setting

Location in survey area: Mainly in the south-central part of the area (fig. 2)
Slope range: 5 to 65 percent
Major vegetation: Bluebunch wheatgrass, Idaho fescue, arrowleaf balsamroot, silky lupine, threetip sagebrush, and antelope bitterbrush
Elevation: 1,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Percentage of survey area: 3 percent

Tyee Soils

Position on landscape: Summits, shoulders, and backslopes of hills
Parent material: Material weathered from granitic rock with a component of loess
Typical profile:
Surface layer—gravelly loam
Subsoil—gravelly loam
Bedrock—weathered granite
Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained

Figure 2.—Typical area of general soil map unit 6. Morical soils are on north-facing slopes in foreground, and Tyee and Ginnis soils are on south-facing slopes in background.

Ginnis Soils

Position on landscape: Footslopes, backslopes, and shoulders of hills
Parent material: Material weathered from granitic rock with a component of loess
Typical profile:
Surface layer—loam
Upper part of subsoil—gravelly loam
Lower part of subsoil—gravelly sandy loam
Bedrock—weathered granite
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Morical Soils

Position on landscape: Summits, shoulders, and backslopes of hills
Parent material: Material weathered from

granitic rock with a component of loess
Typical profile:
Surface layer—silt loam
Subsoil—loam
Bedrock—weathered granite
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Minor Soils

Anders, Bakeoven, and Badge soils on plateaus and Broadax, Swakane, and Wynhoff soils on hills and mountains

Major Uses

Livestock grazing, nonirrigated cropland on the moderately deep soils, and wildlife habitat

Forest Soils on Terraces

Number of map units: 3
Percentage of survey area: 11 percent
Slope range: Nearly level to very steep
Native vegetation: Coniferous trees, grasses, forbs, and shrubs
Elevation: 1,300 to 4,800 feet
Average annual precipitation: 15 to 25 inches
Average annual air temperature: 42 to 48 degrees F
Frost-free period: 90 to 130 days
Parent material: Glacial lake sediment, glacial outwash, and glaciofluvial sediment with a component or mantle of volcanic ash and loess
Depth class: Very deep
Drainage class: Moderately well drained, well drained, and somewhat excessively drained
Major uses: Timber production, livestock grazing, nonirrigated and irrigated cropland, and building site development

7. Phoebe-Garrison-Cedonia

Very deep, well drained, nearly level to very steep soils that formed in glacial lake sediment and glacial outwash with a component of loess and volcanic ash; on terraces and terrace escarpments

Setting

Location in survey area: Mainly along the Columbia and Sanpoil Rivers, in the eastern and south-central parts of the area
Slope range: 0 to 65 percent
Major vegetation: Ponderosa pine, Douglas-fir, common snowberry, white spiraea, blue wildrye, and Idaho fescue
Elevation: 1,300 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Percentage of survey area: 4 percent

Phoebe Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash with a component of loess and volcanic ash
Typical profile:
Surface layer—fine sandy loam
Subsoil—sandy loam
Substratum—loamy sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Garrison Soils

Position on landscape: Terraces
Parent material: Glacial outwash with a component of loess and volcanic ash
Typical profile:
Surface layer—loam
Subsoil—gravelly loam over very gravelly sandy loam
Substratum—very gravelly and extremely gravelly coarse sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Cedonia Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial lake sediment with a component of loess and volcanic ash
Typical profile:
Surface layer—silt loam
Subsoil—silt loam
Substratum—calcareous silt loam
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Minor Soils

Bisbee, Bong, Dart, Hallcreek, Hodgson, Hunters, Inchelium, Lakesol, Narcisse, Scala, Spens, and Springdale soils on terraces and terrace escarpments, Coxlake soils on flood plains, and Bernhill soils on hills and mountains

Major Uses

Timber production, livestock grazing, nonirrigated cropland, irrigated cropland, and building site development

8. Wapal-Parmenter-Stapaloop

Very deep, somewhat excessively drained and well drained, nearly level to very steep soils that formed in glacial outwash and glaciofluvial sediment with a component or mantle of volcanic ash and loess; on terraces and terrace escarpments

Setting

Location in survey area: Terraces throughout the northern part of the area
Slope range: 0 to 65 percent
Major vegetation: Douglas-fir, ponderosa pine, western larch, pinegrass, common snowberry, and kinnikinnick
Elevation: 1,600 to 4,800 feet
Average annual precipitation: 15 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Percentage of survey area: 3 percent

Wapal Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash with a minor component of volcanic ash and loess
Typical profile:
Surface layer—gravelly sandy loam
Subsoil—gravelly sandy loam
Substratum—very gravelly coarse sand
Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained

Parmenter Soils

Position on landscape: Kame terraces and outwash terraces
Parent material: Glacial outwash with a mantle of volcanic ash
Typical profile:
Surface layer—silt loam
Subsoil—stony silt loam
Substratum—very stony loamy sand over extremely cobbly coarse sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Stapaloop Soils

Position on landscape: Terraces
Parent material: Glaciofluvial sediment with a minor component of loess and volcanic ash
Typical profile:
Surface layer—fine sandy loam
Subsoil—fine sandy loam
Substratum—fine sandy loam over very fine sandy loam
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Minor Soils

Goddard, Karamin, Kiehl, Sacheen, and Scrabblers soils on terraces and terrace escarpments, Sanpoil soils on flood plains, and Torboy soils on hills and mountains

Major Uses

Timber production, livestock grazing, and building site development

9. Kiehl-Kewach-Martella

Very deep, moderately well drained and well drained, nearly level to very steep soils that formed in glacial lake sediment and glacial outwash with a mantle of volcanic ash and loess; on terraces and terrace escarpments

Setting

Location in survey area: Mainly on terraces in the northern and eastern parts of the area
Slope range: 0 to 65 percent
Major vegetation: Douglas-fir, ponderosa pine, western larch, grand fir, mallow ninebark, pinegrass, common snowberry, and longtube twinflower
Elevation: 1,300 to 4,000 feet
Average annual precipitation: 15 to 25 inches
Average annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 120 days
Percentage of survey area: 4 percent

Kiehl Soils

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Subsoil—silt loam
Substratum—extremely gravelly loamy coarse sand over extremely gravelly coarse sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Kewach Soils

Position on landscape: Terraces and terrace escarpments

Parent material: Glacial lake sediment with a thin mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Upper part of subsoil—silt loam
Lower part of subsoil—silty clay loam
Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained

Martella Soils

Position on landscape: Terraces
Parent material: Glacial lake sediment with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Upper part of subsoil—silt loam
Lower part of subsoil—silty clay loam
Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained

Minor Soils

Aits, Apex, Neuske, and Stapaloop soils on hills and mountains, Hadencreek, Karamin, Ret, and Scrabblers soils on terraces and terrace escarpments, Cubcreek and Sanpoil soils on flood plains, and Jimcreek soils in swales

Major Uses

Timber production, livestock grazing, nonirrigated cropland, building site development

Forest Soils on Glaciated Hills and Mountains

Number of map units: 5
Percentage of survey area: 30 percent
Slope range: Nearly level to very steep
Native vegetation: Coniferous trees, grasses, forbs, and shrubs
Elevation: 1,500 to 5,700 feet
Average annual precipitation: 14 to 25 inches
Average annual air temperature: 42 to 48 degrees F
Frost-free period: 90 to 130 days
Parent material: Glacial till and material weathered from granitic, metamorphic, and volcanic rock with a mantle or component of volcanic ash and loess
Depth class: Very deep to shallow
Drainage class: Well drained
Major uses: Timber production, livestock grazing, and wildlife habitat

10. Donavan-Republic-Vanbrunt

Moderately deep and very deep, well drained, nearly level to very steep soils that formed in glacial till and material weathered from granitic rock with a component of loess and volcanic ash; on glaciated hills and mountains

Setting

Location in survey area: Mainly in the west-central and northwestern parts of the area
Slope range: 3 to 65 percent
Major vegetation: Ponderosa pine, Douglas-fir on northerly aspects, common snowberry, antelope bitterbrush, pinegrass, bluebunch wheatgrass, and Idaho fescue
Elevation: 1,500 to 4,400 feet
Average annual precipitation: 14 to 20 inches
Average annual air temperature: 42 to 48 degrees F
Frost-free period: 90 to 130 days
Percentage of survey area: 6 percent

Donavan Soils

Position on landscape: Dominantly south-facing toeslopes, footslopes, and backslopes of hills and mountains
Parent material: Glacial till with a component of loess and volcanic ash
Typical profile:
Surface layer—loam
Subsoil—gravelly loam
Substratum—dense glacial till
Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Republic Soils

Position on landscape: Dominantly north-facing toeslopes and backslopes of hills and mountains
Parent material: Glacial till with a component of loess and volcanic ash
Typical profile:
Surface layer—loam
Subsoil—gravelly loam
Substratum—gravelly sandy loam over very gravelly sandy loam
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Vanbrunt Soils

Position on landscape: Ridges and dominantly south-facing shoulders and backslopes of mountains

Parent material: Material weathered from granitic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—very stony sandy loam
Subsoil—extremely cobbly sandy loam
Substratum—very cobbly sandy loam
Bedrock—granitic rock
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Minor Components

Apex, Johntom, Mineral, Northstar, Swakane, and Whitestone soils on hills and mountains; Kartar, Hudnut, and Lostcreek soils on terraces and terrace escarpments; Goldlake soils in swales; and Rock outcrop

Major Uses

Timber production, livestock grazing, and wildlife habitat

11. Raisio-Borgeau-Stevens

Moderately deep and very deep, well drained, nearly level to very steep soils that formed in glacial till and material weathered from metamorphic rock with a component of loess and volcanic ash; on glaciated hills and mountains

Setting

Location in survey area: Mainly in the extreme eastern and northeastern parts of the area
Slope range: 0 to 65 percent
Major vegetation: Widely spaced ponderosa pine, bluebunch wheatgrass, Idaho fescue, common snowberry, and rose
Elevation: 1,600 to 4,700 feet
Average annual precipitation: 15 to 22 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Percentage of survey area: 4 percent

Raisio Soils

Position on landscape: Dominantly south-facing ridges, shoulders, and backslopes of hills and mountains
Parent material: Material weathered from metamorphic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—channery loam
Subsoil—very channery loam
Bedrock—phyllite
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Borgeau Soils

Position on landscape: Dominantly south-facing backslopes and footslopes of hills
Parent material: Glacial till and colluvium derived from metamorphic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—loam
Subsoil—very gravelly loam
Substratum—very gravelly loam over extremely gravelly loam
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Stevens Soils

Position on landscape: Toeslopes, footslopes, and backslopes of hills
Parent material: Glacial till with a component of loess and volcanic ash
Typical profile:
Surface layer—silt loam
Subsoil—silt loam
Substratum—dense glacial till
Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Minor Soils

Dehart, Donavan, Republic, Rufus, and Scoap soils on hills and mountains

Major Uses

Livestock grazing and wildlife habitat

12. Nevine-Merkel-Mineral

Moderately deep, well drained, gently sloping to very steep soils that formed in glacial till and material weathered from granitic rock with a mantle or component of volcanic ash and loess; on glaciated hills and mountains

Setting

Location in survey area: Dominantly in the northern half of the area
Slope range: 5 to 65 percent
Major vegetation: Douglas-fir, ponderosa pine, western larch, pinegrass, mallow ninebark, creambush oceanspray, and pachystima

Elevation: 2,000 to 5,300 feet
Average annual precipitation: 16 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Percentage of survey area: 12 percent

Nevine Soils

Position on landscape: Dominantly north-facing toeslopes, footslopes, and backslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash
Typical profile:
Surface layer—silt loam
Subsoil—loam
Substratum—dense glacial till
Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Merkel Soils

Position on landscape: Dominantly south-facing toeslopes, footslopes, and backslopes of hills and mountains
Parent material: Granitic glacial till with a component of loess and volcanic ash in the upper part
Typical profile:
Surface layer—sandy loam
Subsoil—gravelly sandy loam
Substratum—dense glacial till
Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Mineral Soils

Position on landscape: Ridges and dominantly south-facing shoulders and backslopes of mountains
Parent material: Colluvium and glacial till derived from granitic rock with a component of loess and volcanic ash in the upper part
Typical profile:
Surface layer—stony loam
Subsoil—very gravelly loam
Substratum—very stony sandy loam
Bedrock—granitic rock
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Minor Components

Apex, Barnellcreek, Capoose, Koepke, Louploup, Republic, and Stepstone soils on hills and mountains; Lostcreek soils on terraces and terrace escarpments; Rock outcrop; and Rubble land

Major Uses

Timber production, livestock grazing, and wildlife habitat

13. Elbowlake-Oxerine-Aits

Moderately deep to very deep, well drained, nearly level to very steep soils that formed in glacial till and material weathered from metasedimentary and metamorphic rock with a mantle of volcanic ash and loess; on glaciated hills and mountains

Setting

Location in survey area: Mainly in the extreme northeastern and east-central parts of the area
Slope range: 0 to 65 percent
Major vegetation: Douglas-fir, western larch, grand fir, ponderosa pine, mallow ninebark, creambush oceanspray, pinegrass, and longtube twinflower
Elevation: 2,000 to 5,700 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 120 days
Percentage of survey area: 3 percent

Elbowlake Soils

Position on landscape: Backslopes, footslopes, and toeslopes of hills and mountains
Parent material: Volcanic ash over glacial till derived dominantly from metasedimentary rock
Typical profile:
Surface layer—silt loam
Subsoil—silt loam over very gravelly loam
Substratum—dense glacial till
Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Oxerine Soils

Position on landscape: Backslopes, shoulders, and ridges of hills and mountains
Parent material: Material weathered from metamorphic rock with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Subsoil—channery silt loam over very channery loam
Substratum—very channery loam
Bedrock—phyllite

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Aits Soils

Position on landscape: Backslopes, footslopes, and toeslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Subsoil—silt loam over gravelly loam
Substratum—dense glacial till
Depth class: Moderately deep to very deep (20 to 60 inches or more to dense glacial till)
Drainage class: Well drained

Minor Soils

Apex, Barnellcreek, Hartill, Inkler, Koepke, Raisio, Republic, Rufus, and Scoap soils on hills and mountains and Kiehl soils on terraces and terrace escarpments

Major Uses

Timber production, livestock grazing, and wildlife habitat

14. Inkler-Baldknob-Thout

Very deep, shallow, and moderately deep, well drained, gently sloping to very steep soils that formed in glacial till and material weathered from volcanic rock with a component of volcanic ash and loess; on glaciated hills and mountains

Setting

Location in survey area: Mainly flanking both sides of the Sanpoil River Valley, in the north-central part of the area
Slope range: 5 to 70 percent
Major vegetation: Douglas-fir, ponderosa pine, pinegrass, bluebunch wheatgrass, Idaho fescue, common snowberry, and mallow ninebark
Elevation: 2,000 to 4,200 feet
Average annual precipitation: 15 to 25 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days
Percentage of survey area: 5 percent

Inkler Soils

Position on landscape: Backslopes, footslopes, and toeslopes of hills and mountains
Parent material: Glacial till and colluvium derived from volcanic rock with a component of volcanic ash and loess in the upper part
Typical profile:
Surface layer—gravelly silt loam
Subsoil—gravelly silt loam over gravelly loam
Substratum—very gravelly loam over very gravelly sandy loam
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Baldknob Soils

Position on landscape: Glacially scoured summits, shoulders, and backslopes of hills and mountains
Parent material: Material weathered from volcanic rock and some glacial till with a component of volcanic ash and loess
Typical profile:
Surface layer—very stony loam
Subsoil—very gravelly loam over extremely gravelly loam
Bedrock—rhyodacite
Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained

Thout Soils

Position on landscape: Summits, shoulders, and backslopes of hills and mountains
Parent material: Material weathered from volcanic rock with some glacial till and a minor component of volcanic ash and loess
Typical profile:
Surface layer—gravelly loam
Subsoil—very gravelly loam
Bedrock—rhyodacite
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Minor Components

Lithic Xerorthents, Nevine, Northstar, Johntom, and Scoap soils, and Xerochrepts on hills and mountains; Rock outcrop; and Rubble land

Major Uses

Timber production, livestock grazing, and wildlife habitat

Forest Soils on Nonglaciated Hills and Mountains

Number of map units: 5
Percentage of survey area: 22 percent
Slope range: Nearly level to very steep

Native vegetation: Coniferous trees, grasses, forbs, and shrubs
Elevation: 1,600 to 5,700 feet
Average annual precipitation: 14 to 25 inches
Average annual air temperature: 41 to 48 degrees F
Frost-free period: 90 to 130 days
Parent material: Material weathered from granitic, metamorphic, or volcanic rock with a component or mantle of volcanic ash and loess
Depth class: Shallow to very deep
Drainage class: Well drained
Major uses: Timber production, livestock grazing, and wildlife habitat

15. Spokane-Skanid-Dinkelman

Shallow to deep, well drained, gently sloping to very steep soils that formed in material weathered from granitic rock with a component of loess and volcanic ash; on nonglaciated hills and mountains

Setting

Location in survey area: Mainly in granitic areas in the south-central and southern parts of the area
Slope range: 5 to 65 percent
Major vegetation: Ponderosa pine, Douglas-fir, Idaho fescue, bluebunch wheatgrass, pinegrass, antelope bitterbrush, and common snowberry
Elevation: 1,700 to 4,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 48 degrees F
Frost-free period: 90 to 130 days
Percentage of survey area: 7 percent

Spokane Soils

Position on landscape: Summits and dominantly south-facing shoulders, backslopes, and footslopes of hills and mountains
Parent material: Material weathered from granitic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—loam
Subsoil—sandy loam
Substratum—gravelly coarse sandy loam over gravelly loamy coarse sand
Bedrock—weathered granitic rock
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Skanid Soils

Position on landscape: Ridges, summits, and dominantly south-facing shoulders and backslopes of hills and mountains
Parent material: Material weathered from granitic rock with a minor component of loess and volcanic ash
Typical profile:
Surface layer—gravelly sandy loam
Substratum—very gravelly coarse sandy loam
Bedrock—weathered granitic rock
Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained

Dinkelman Soils

Position on landscape: Dominantly north-facing shoulders, backslopes, and footslopes of hills and mountains
Parent material: Material weathered from granitic rock with a component of volcanic ash and loess
Typical profile:
Surface layer—gravelly loam
Subsoil—gravelly sandy loam
Bedrock—weathered granitic rock
Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained

Minor Soils

Bearspring, Centralpeak, Georgecreek, Hellgate, Swakane, Vanbrunt, and Whitestone soils on hills and mountains and Reardan soils on plateaus

Major Uses

Timber production, livestock grazing, and wildlife habitat

16. Oxerine-Raisio-Rufus

Moderately deep and shallow, well drained, moderately sloping to very steep soils that formed in material weathered from metamorphic rock with a component or mantle of volcanic ash and loess; on nonglaciated hills and mountains

Setting

Location in survey area: Mainly in the southeastern part of the area
Slope range: 5 to 65 percent
Major vegetation: Ponderosa pine, bluebunch wheatgrass, and Idaho fescue with Douglas-fir, mallow ninebark, creambush oceanspray, and pinegrass on the north-facing slopes
Elevation: 1,900 to 5,700 feet
Average annual precipitation: 15 to 25 inches
Average annual air temperature: 42 to 48 degrees F

Frost-free period: 90 to 130 days
Percentage of survey area: 3 percent

Oxerine Soils

Position on landscape: Dominantly north-facing backslopes and shoulders of hills and mountains
Parent material: Material weathered from metamorphic rock with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Subsoil—channery silt loam
Substratum—very channery loam
Bedrock—phyllite
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Raisio Soils

Position on landscape: Dominantly south-facing ridges, shoulders, and backslopes of hills and mountains
Parent material: Material weathered from metamorphic rock with a component of volcanic ash and loess
Typical profile:
Surface layer—channery loam
Subsoil—very channery loam
Bedrock—phyllite
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Rufus Soils

Position on landscape: Dominantly south-facing ridges, shoulders, and backslopes of hills and mountains
Parent material: Material weathered from metamorphic rock with a component of volcanic ash and loess
Typical profile:
Upper part of surface layer—channery loam
Lower part of surface layer—very channery loam
Bedrock—schist
Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained

Minor Soils

Dehart, Wellscreek, and Wilmont soils on hills

Major Uses

Timber production, livestock grazing, and wildlife habitat

17. Inkler-Northstar-Johntom

Very deep, moderately deep, and shallow, well drained, gently sloping to very steep soils that formed in material weathered from volcanic rock with a component of loess and volcanic ash; on nonglaciated hills and mountains

Setting

Location in survey area: Mainly flanking the Sanpoil River Valley, in the south-central part of the area (fig. 3)
Slope range: 5 to 65 percent
Major vegetation: Ponderosa pine, bluebunch wheatgrass, and Idaho fescue on southerly aspects and Douglas-fir, mallow ninebark, and pinegrass on northerly aspects
Elevation: 1,600 to 4,200 feet
Average annual precipitation: 14 to 25 inches
Average annual air temperature: 42 to 47 degrees F
Frost-free period: 90 to 130 days
Percentage of survey area: 3 percent

Inkler Soils

Position on landscape: Dominantly north-facing backslopes, footslopes, and toeslopes of hills and mountains
Parent material: Material weathered from volcanic rock with a component of volcanic ash and loess
Typical profile:
Surface layer—gravelly silt loam
Subsoil—gravelly silt loam over gravelly loam
Substratum—very gravelly loam over very gravelly sandy loam
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Northstar Soils

Position on landscape: Dominantly south-facing ridges, shoulders, and backslopes of hills and mountains
Parent material: Material weathered from volcanic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—gravelly loam
Subsoil—very gravelly loam
Substratum—extremely cobbly loam

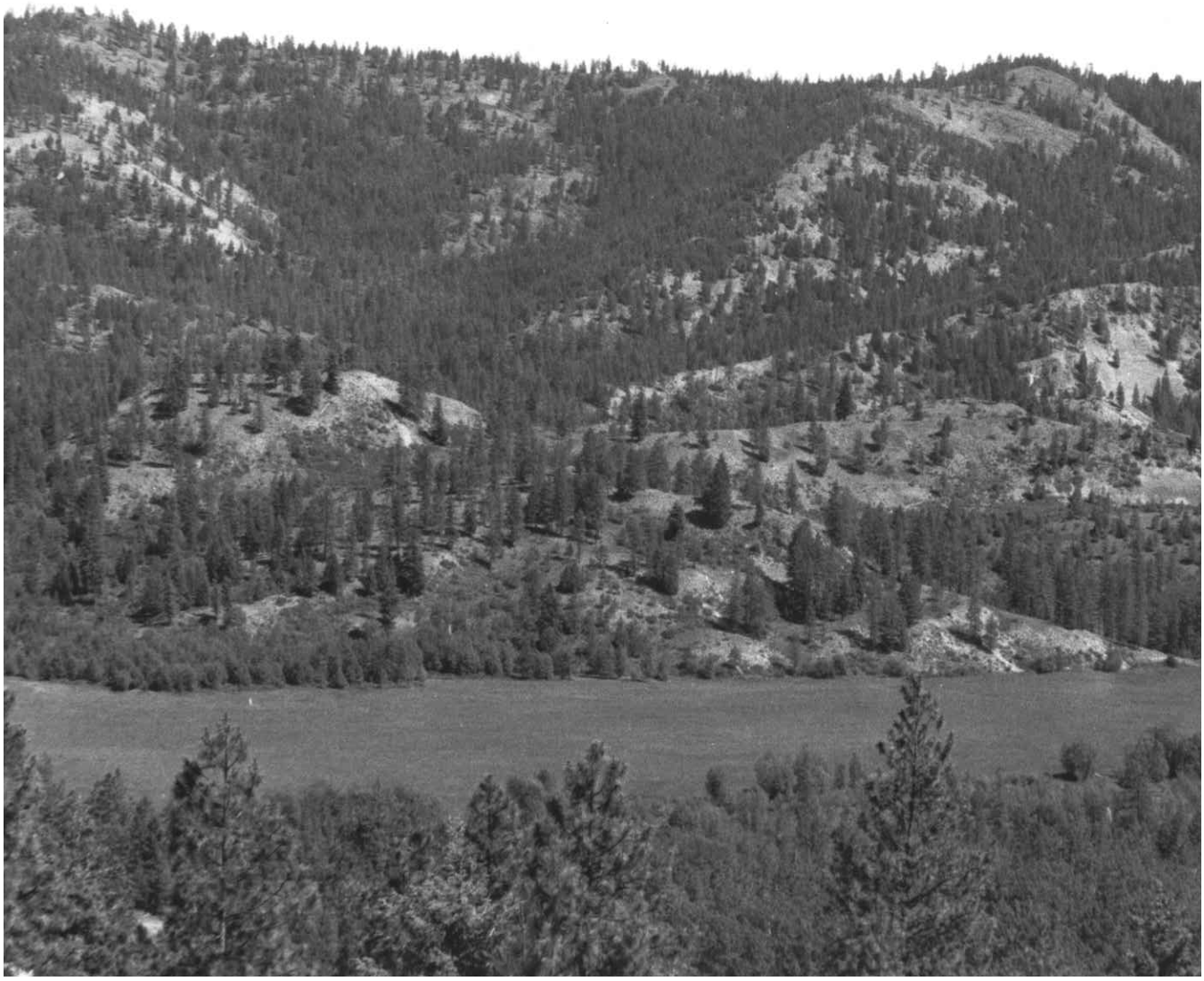


Figure 3.—Typical area of general soil map unit 17. Northstar and Johntom soils are on the sparsely forested ridges and south-facing slopes, and Inkler soils are on the more densely forested north-facing slopes. Ralsen soils are on the nonforested meadow in foreground.

Bedrock—rhyodacite
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Johntom Soils

Position on landscape: Dominantly south-facing ridges, shoulders, and upper backslopes of hills and mountains
Parent material: Material weathered from volcanic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—stony loam
Substratum—extremely gravelly coarse sandy loam
Bedrock—rhyodacite
Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained

Minor Components

Baldknob, Louiecreek, Scoap, and Thout soils on hills and mountains; Rock outcrop; and Rubble land

Major Uses

Timber production, livestock grazing, and wildlife habitat

18. Centralpeak-Ohscow-Mineral

Moderately deep and very deep, well drained, gently sloping to very steep soils that formed in material weathered from granitic rock with a mantle or component of volcanic ash and loess; on nonglaciated mountains

Setting

Location in survey area: Mainly in the south-central and eastern parts of the area
Slope range: 5 to 65 percent
Major vegetation: Douglas-fir, ponderosa pine, western larch, grand fir, mallow ninebark, creambush oceanspray, pinegrass, and longtube twinflower
Elevation: 2,000 to 5,300 feet
Average annual precipitation: 16 to 25 inches
Average annual air temperature: 41 to 44 degrees F
Frost-free period: 90 to 120 days
Percentage of survey area: 7 percent

Centralpeak Soils

Position on landscape: Ridges, shoulders, backslopes, and footslopes of mountains
Parent material: Material weathered from granitic rock with a mantle of volcanic ash and loess
Typical profile:
Surface layer—loam
Subsoil—loam over coarse sandy loam
Substratum—gravelly loamy coarse sand
Bedrock—weathered granitic rock
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Ohscow Soils

Position on landscape: Footslopes and backslopes of mountains
Parent material: Material weathered from granitic rock with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Subsoil—silt loam over very gravelly sandy loam
Substratum—very cobbly sandy loam over very cobbly loamy sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Mineral Soils

Position on landscape: Dominantly south-facing ridges, shoulders, and backslopes of mountains
Parent material: Material weathered from granitic rock with a component of loess and volcanic ash
Typical profile:
Surface layer—stony loam
Subsoil—very gravelly loam
Substratum—very stony sandy loam
Bedrock—granitic rock
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Minor Soils

Bearspring, Brusher, Canteen, Dinkelman, Friedlander, Skanid, and Spokane soils on hills and mountains and Sclome soils in swales

Major Uses

Timber production, livestock grazing, and wildlife habitat

19. Wellscreek-Wilmont-Henneway

Very deep and deep, well drained, nearly level to very steep soils that formed in material weathered from metamorphic rock with a mantle or component of volcanic ash and loess; on nonglaciated hills and mountains

Setting

Location in survey area: Mainly in the east-central part of the area
Slope range: 0 to 65 percent
Major vegetation: Douglas-fir, western larch, grand fir, ponderosa pine, mallow ninebark, creambush oceanspray, pinegrass, and longtube twinflower
Elevation: 2,000 to 3,700 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 41 to 45 degrees F
Frost-free period: 90 to 120 days
Percentage of survey area: 2 percent

Wellscreek Soils

Position on landscape: Dominantly south-facing toeslopes, footslopes, and backslopes of hills and mountains

Parent material: Material weathered from metamorphic rock with a small component of loess and volcanic ash
Typical profile:
Surface layer—very channery loam
Subsoil—extremely cobbly silt loam over extremely channery loam
Substratum—extremely channery loam
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Wilmont Soils

Position on landscape: Dominantly north-facing toeslopes, footslopes, and backslopes of hills and mountains
Parent material: Material weathered from metamorphic rock with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Subsoil—very channery sandy loam
Substratum—extremely channery loamy sand over extremely channery sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Henneway Soils

Position on landscape: Toeslopes and footslopes of hills and mountains
Parent material: Material weathered from metamorphic rock with a mantle of volcanic ash and loess
Typical profile:
Surface layer—silt loam
Upper part of subsoil—silt loam
Lower part of subsoil—silty clay loam over channery silty clay loam and channery clay loam
Bedrock—phyllite
Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained

Minor Soils

Buhrig (shaly substratum), Hartill, Oxerine, Raisio, Renha, and Rufus soils on hills and mountains

Major Uses

Timber production, livestock grazing, and wildlife habitat

Forest Soils on High Mountains

Number of map units: 1
Percentage of survey area: 6 percent
Slope range: 0 to 70 percent
Native vegetation: Coniferous trees, shrubs, forbs, and grasses
Elevation: 3,000 to 6,800 feet
Average annual precipitation: 20 to 35 inches
Average annual air temperature: 37 to 41 degrees F
Frost-free period: 70 to 100 days
Parent material: Glacial till, material weathered from granitic rock, and glacial outwash with a mantle of volcanic ash
Depth class: Moderately deep and very deep
Drainage class: Well drained
Major uses: Timber production, wildlife habitat, and limited livestock grazing

20. Manley-Resner-Moses

Moderately deep and very deep, well drained, gently sloping to very steep soils that formed in glacial till, material weathered from granitic rock, and glacial outwash with a mantle of volcanic ash; on high mountains

Setting

Location in survey area: Mainly in the northern part of the area
Slope range: 0 to 70 percent
Major vegetation: Subalpine fir, western larch, Douglas-fir, lodgepole pine, black mountain huckleberry, pachystima, longtube twinflower, and pinegrass
Elevation: 3,000 to 6,800 feet
Average annual precipitation: 20 to 35 inches
Average annual air temperature: 37 to 41 degrees F
Frost-free period: 70 to 100 days
Percentage of survey area: 6 percent

Manley Soils

Position on landscape: Footslopes and backslopes of mountains
Parent material: Glacial till with a mantle of volcanic ash
Typical profile:
Surface layer—silt loam
Subsoil—silt loam
Substratum—dense glacial till
Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Resner Soils

Position on landscape: Toeslopes and footslopes of mountains, terraces, and terrace escarpments

Parent material: Glacial outwash and ablation till with a mantle of volcanic ash
Typical profile:
Surface layer—loam
Subsoil—loam
Substratum—very gravelly loamy sand over extremely gravelly loamy sand
Depth class: Very deep (more than 60 inches)
Drainage class: Well drained

Moses Soils

Position on landscape: Footslopes, backslopes, and summits of mountains
Parent material: Material weathered from granitic rock with a mantle of volcanic ash
Typical profile:
Surface layer—silt loam
Subsoil—very gravelly coarse sandy loam
Substratum—very gravelly coarse sandy loam
Bedrock—weathered granitic rock
Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Minor Soils

Buhrig, Codylake, Mineral, Nevine, Togo, and Tunkcreek soils on hills and mountains and Lynxcreek and Sitdown soils on terraces and terrace escarpments

Major Uses

Timber production, wildlife habitat, and limited livestock grazing

Broad Land Use Considerations

The soils in this survey area vary widely in their potential for major land uses. Approximately 66 percent of the area is forestland.

General soil map units 7, 10, 11, 15, and 17 are the warmest, driest forested soils in the area. Ponderosa pine is the dominant tree species, and Douglas-fir is a minor species. Competition from shrubs and grasses and high seedling mortality as a result of low annual precipitation and high summer temperatures are major management concerns. Forest productivity is low on the soils in these units. Most areas of these units have high potential for grazing.

General soil map units 8, 9, 12, 13, 14, 16, 18, and 19 include forested soils that are cooler and receive more moisture than those mentioned in the previous paragraph. Douglas-fir, western larch, grand fir, ponderosa pine, and lodgepole pine are examples of trees that grow on these units. Many of the soils in these units have a mantle of volcanic ash, which is susceptible to compaction, puddling, and displacement by timber harvesting equipment. Proper timing and planning of logging activities is important to minimize the damage. Competition from shrubs and pinegrass can be severe. Forest productivity is moderate to high. The potential for grazing is low to moderate, depending on the successional stage and ecological unit.

The soils in general soil map unit 20 are the coldest and receive the most moisture of all of the forested soils in the survey area. Subalpine fir, Douglas-fir, western larch, and lodgepole pine are examples of trees that grow on this unit. Engelmann spruce and whitebark pine grow at the highest elevations. The soils in this unit have a mantle of volcanic ash, which is susceptible to compaction, puddling, and displacement by timber harvesting equipment. Proper timing and planning of logging operations help to minimize the damage. Invasion by shrubs and grasses following logging can interfere with regeneration. Forest productivity is moderate to high. The potential for grazing is low, except in recently logged areas.

Approximately 32 percent of the survey area is used as rangeland. General soil map units 1 and 3 receive 9 to 12 inches of precipitation annually. Forage production on these units is low because of the low annual precipitation and the limited available water capacity. The hazard of wind erosion can be severe in areas that have been overgrazed and highly disturbed. General soil map units 2, 4, 5, and 6 receive 12 to 15 inches of precipitation annually. Forage production on these units is higher than on units 1 and 3. The steepness of slope limits livestock distribution.

Approximately 1.2 percent of the survey area is used as nonirrigated cropland, of which most is in general soil map units 2 and 4 but minor amounts are in units 3, 5, 6, and 7. The main crops grown are winter wheat, spring wheat, and barley, and they generally are grown in rotation with summer fallow. The main limitations for nonirrigated crops are the low annual precipitation and the hazard of water erosion. Wind erosion is a hazard on the soils that have a sandy loam surface layer.

Approximately 0.4 percent of the survey area is used as irrigated cropland. Most of this cropland is in general soil map unit 1, but minor amounts are in units 2, 7, 8, and 9. The main crops grown are orchard fruit, small grain, and hay and pasture. The main limitations for irrigated crops are the hazards of wind and water erosion and the limited available water capacity.

Areas of general soil map units 2 and 7 below an elevation of about 1,800 feet are suited to orchards.

Aspect and air drainage should be considered when selecting sites for orchards. These map units are also used for irrigated small grain and hay and pasture. When designing irrigation systems, special consideration is needed for soils that have restricted permeability, such as those of the Cedonia and Nespelem series.

General soil map units 8 and 9 are suited to irrigated hay and pasture. The Kewach soils are limited by a restricted water intake rate and moderately slow permeability, and the Kiehl and Wapal soils are limited by the restricted available water capacity and rapid or very rapid permeability.

Some areas of general soil map units 1, 2, 7, 8, and 9 are used for building site development. Many of the soils in these units have very rapid permeability, including the Ewall, Garrison, Owhi, Pogue, Quincy, Skaha, and Wapal soils. The very rapid permeability limits filtering of septic tank effluent, which is a concern in highly populated areas or in areas that have groundwater at a shallow depth. The Cedonia, Kewach, Martella, and Nespelem soils have restricted permeability that limits percolation of septic tank effluent. The Kewach and Martella soils have a seasonal high water table, which should be considered in the design of dwellings and septic tank filter systems.

Because of their proximity to the major rivers and lakes, general soil map units 1, 2, 7, 8, and 9 have the highest potential for use as campgrounds and for water sports such as boating, fishing, and swimming. The potential for recreational use varies considerably, depending on the intensity of use and the properties of the soils.

General soil map units 10 through 20 have good potential for hiking, backpacking, and horseback riding because of the mountainous topography that has high esthetic value. These units also are well suited to cross-country skiing. Snowpack in most years is reliable, and there is an extensive network of roads.

Detailed Soil Map Units

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

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

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in a particular map unit description. Other inclusions, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. 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 inclusions are mentioned in the map unit descriptions. A few areas of inclusions 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 inclusions in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Aits silt loam, dry, 20 to 40 percent slopes, is a phase of the Aits series.

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

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. Bakeoven-Timentwa-Rock outcrop complex, 0 to 30 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. Centralpeak loams association, 5 to 20 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop 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.

1—Achimin silt loam, 0 to 8 percent slopes

Composition

Achimin soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Toeslopes of foothills and depressions on till plains
Parent material: Loess overlying siltstone residuum
Slope range: 0 to 8 percent
Elevation: 1,500 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 18 inches—brown silt loam

Upper part of subsoil:
18 to 34 inches—yellowish brown and dark yellowish brown silty clay loam

Lower part of subsoil:
34 to 60 inches—yellowish brown and pale yellow, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Colockum soils
- Soils that have a dark surface layer that is more than 20 inches thick and have less clay in the subsoil
- Soils that are moderately well drained
- Soils that have a hardpan at a depth of 20 to 40 inches
- Conconully soils
- Timentwa soils
- Emdent soils

Major Uses

Livestock grazing, nonirrigated cropland, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by water erosion and steepness of slope.

2—Achimin-Calcic Pachic Haploxerolls complex, 3 to 30 percent slopes

Composition

Achimin soil and similar soils: 60 percent
Calcic Pachic Haploxerolls and similar soils: 30 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Achimin—toeslopes, footslopes, and backslopes of foothills; Calcic Pachic Haploxerolls—closed depressions
Parent material: Achimin—loess overlying siltstone residuum; Calcic Pachic Haploxerolls—loess-influenced slope alluvium
Slope range: Achimin—8 to 30 percent; Calcic Pachic Haploxerolls—3 to 20 percent
Elevation: 1,500 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Achimin

Surface layer:
0 to 18 inches—brown silt loam

Upper part of subsoil:
18 to 34 inches—yellowish brown and dark yellowish brown silty clay loam

Lower part of subsoil:
34 to 60 inches—yellowish brown and pale yellow, calcareous silt loam

Reference Profile

Calcic Pachic Haploxerolls

Surface layer:
0 to 24 inches—very dark grayish brown and brown silt loam

Upper part of subsoil:
24 to 36 inches—pale brown silt loam

Middle part of subsoil:
36 to 42 inches—brown fine sandy loam

Lower part of subsoil:
42 to 60 inches—yellowish brown and light yellowish brown, calcareous fine sandy loam

Soil Properties and Qualities

Depth class: Achimin—very deep (more than 60 inches); Calcic Pachic Haploxerolls—very deep (more than 60 inches) or deep (40 to 60 inches to bedrock)
Drainage class: Achimin—well drained; Calcic Pachic Haploxerolls—moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through July (see "Water Features" table)
Salinity: Calcic Pachic Haploxerolls—very slightly saline between depths of 42 and 60 inches

Contrasting Inclusions

- Soils that are 20 to 40 inches deep to basalt
- Soils that have a bouldery surface
- Soils that have a hardpan at a depth of 20 to 40 inches
- Emdent soils
- Colockum soils
- Conconully soils
- Rock outcrop

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- The Achimin soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The Calcic Pachic Haploxerolls have a high water table at certain times of the year that limits use of the soils.
- The Calcic Pachic Haploxerolls are too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope and water erosion and by wetness of the Calcic Pachic Haploxerolls.

3—Aeneas fine sandy loam, 0 to 5 percent slopes

Composition

Aeneas soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 0 to 5 percent
Elevation: 800 to 1,900 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown fine sandy loam

Subsoil:
10 to 27 inches—pale brown fine sandy loam

Substratum:
27 to 60 inches—light brownish gray and multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow

Hazard of water erosion: Cropland—slight; woodland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Ellisforde soils
- Cashmere and Farrell soils
- Cashmont soils
- Pogue soils
- Skaha soils
- Strat soils

Major Uses

Livestock grazing, irrigated orchards, irrigated cropland, irrigated hay and pasture, nonirrigated cropland, wildlife habitat, recreation, watershed, and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

4—Aeneas fine sandy loam, 5 to 10 percent slopes

Composition

Aeneas soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash with loess in the upper part
Slope range: 5 to 10 percent
Elevation: 800 to 1,900 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown fine sandy loam

Subsoil:
10 to 27 inches—pale brown fine sandy loam

Substratum:
27 to 60 inches—light brownish gray and multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Ellisforde soils
- Quincy soils
- Cashmere and Farrell soils
- Skaha soils
- Pogue soils
- Cashmont soils
- Strat soils

Major Uses

Livestock grazing; nonirrigated cropland; irrigated cropland, orchards, and hay and pasture; recreation; watershed; wildlife habitat; and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

5—Ahtanum silt loam, 0 to 3 percent slopes

Composition

Ahtanum soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Flood plains and depressional areas, including backswamps of streams

Parent material: Alluvium derived from volcanic ash and loess
Slope range: 0 to 3 percent
Elevation: 1,100 to 2,800 feet
Average annual precipitation: 10 to 14 inches
Average annual air temperature: 47 to 51 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown, calcareous silt loam

Upper part of subsoil:
12 to 24 inches—light brownish gray, calcareous silt loam
24 to 25 inches—light brownish gray hardpan

Lower part of subsoil:
25 to 60 inches—light gray and gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to a hardpan)
Drainage class: Somewhat poorly drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Very slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Moderate
Water table: Present in November through August (see “Water Features” table)
Salinity: Moderate from the surface to a depth of 60 inches

Contrasting Inclusions

- Poween soils
- Gooseflats soils
- Nespelem soils

Major Uses

Livestock grazing and wildlife habitat

Use and Management

Livestock grazing

- The soil is affected by salt. If the range is in poor condition, salts concentrate on the bare surface as a result of evaporation.
- Reseeding is very difficult. Only salt-tolerant species should be used.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by rooting depth, wetness, and excess salts.

6—Aits silt loam, dry, 5 to 20 percent slopes

Composition

Aits soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Toeslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 5 to 20 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 4 inches—yellowish brown silt loam

Upper part of subsoil:
4 to 13 inches—light yellowish brown silt loam

Lower part of subsoil:
13 to 27 inches—pale brown gravelly loam

Substratum:
27 to 60 inches—yellowish brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Kiehl soils

- Newbell soils
- Republic soils
- Elbowlake soils
- Koepke soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None
Management consideration:
- Accumulated snow can bend or break small trees.

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

7—Aits silt loam, dry, 20 to 40 percent slopes

Composition

Aits soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 4 inches—yellowish brown silt loam

Upper part of subsoil:
4 to 13 inches—light yellowish brown silt loam

Lower part of subsoil:
13 to 27 inches—pale brown gravelly loam

Substratum:
27 to 60 inches—yellowish brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Kiehl soils
- Newbell soils
- Republic soils
- Elbowlake soils
- Koepke soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

8—Aits silt loam, sandy substratum, 0 to 8 percent slopes

Composition

Aits soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Stream terraces and valley bottoms
Parent material: Alluvium derived from glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 0 to 8 percent
Elevation: 2,000 to 2,300 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 4 inches—brown silt loam

Upper part of subsoil:
4 to 12 inches—pale brown gravelly loam

Lower part of subsoil:
12 to 33 inches—very pale brown gravelly sandy loam

Upper part of substratum:
33 to 42 inches—very pale brown gravelly sandy loam

Lower part of substratum:
42 to 60 inches—light brownish gray very gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Kiehl soils
- Soils that are somewhat poorly drained or moderately well drained
- Parmenter soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch and western redcedar—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

9—Anders silt loam, 0 to 8 percent slopes

Composition

Anders soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Plateaus
Parent material: Loess
Slope range: 0 to 8 percent
Elevation: 1,900 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 14 inches—grayish brown and brown silt loam

Subsoil:
14 to 23 inches—brown gravelly silt loam

Bedrock:
23 to 27 inches—basalt

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Bakeoven soils
- Olical soils
- Broadax soils
- Soils that have bedrock at a depth of 10 to 20 inches

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by water erosion, steepness of slope, and rooting depth.

10—Andic Cryaquepts, 0 to 3 percent slopes

Composition

Andic Cryaquepts and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Depressional areas in moraines and mountains
Parent material: Alluvium mixed with volcanic ash
Slope range: 0 to 3 percent
Elevation: 3,000 to 5,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 40 to 42 degrees F
Frost-free period: 80 to 100 days

Reference Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 9 inches—grayish brown silt loam

Lower part of surface layer:
9 to 17 inches—gray fine sandy loam

Subsoil:
17 to 22 inches—grayish brown, gleyed gravelly sandy loam

Substratum:
22 to 60 inches—stratified gray loamy sand over multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Poorly drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—none or slight
Water table: Present in December through August (see “Water Features” table)

Contrasting Inclusions

- Borosaprists
- Cryofluvents
- Manley and Resner soils

Major Uses

Timber production, livestock grazing, recreation, watershed, wildlife habitat, and wetland wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Engelmann spruce, subalpine fir, and lodgepole pine—readily; Douglas-fir and western larch—periodically
Limitations for planting: None

11—Annum silt loam, 8 to 25 percent slopes

Composition

Annum soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Broad summits and shoulders of hills

Parent material: Residuum derived from granitic rock with a mantle of loess
Slope range: 8 to 25 percent
Elevation: 2,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 12 inches—dark grayish brown and grayish brown silt loam

Upper part of subsoil:
12 to 24 inches—brown and yellowish brown silt loam

Lower part of subsoil:
24 to 46 inches—strong brown clay loam

Substratum:
46 to 53 inches—light yellowish brown, calcareous gravelly sandy loam

Bedrock:
53 to 63 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Morical soils
- Ginnis soils
- Broadax soils

Major Uses

Livestock grazing, nonirrigated cropland, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

12—Annum silt loam, 8 to 25 percent north slopes

Composition

Annum soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: North- and east-facing shoulders of hills
Parent material: Residuum derived from granitic rock with a mantle of loess
Slope range: 8 to 25 percent
Elevation: 2,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 15 inches—grayish brown silt loam

Upper part of subsoil:
15 to 24 inches—light yellowish brown silt loam

Lower part of subsoil:
24 to 45 inches—light yellowish brown sandy clay loam

Substratum:
45 to 54 inches—pale brown, calcareous gravelly loam

Bedrock:
54 to 64 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Morical soils
- Ginnis soils
- Broadax soils

Major Uses

Livestock grazing, nonirrigated cropland, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
• This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

13—Annum silt loams complex, 8 to 25 percent slopes

Composition

Annum, north slopes, soil and similar soils: 45 percent
Annum, south slopes, soil and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Annum, north slopes—north- and east-facing shoulders of hills; Annum, south slopes—summits and south- and west-facing shoulders of hills
Parent material: Residuum derived from granitic rock with a mantle of loess
Slope range: 8 to 25 percent
Elevation: 2,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Annum, north slopes

Surface layer:
0 to 15 inches—grayish brown silt loam

Upper part of subsoil:
15 to 24 inches—light yellowish brown silt loam

Lower part of subsoil:
24 to 45 inches—light yellowish brown sandy clay loam

Substratum:
45 to 54 inches—pale brown, calcareous gravelly loam

Bedrock:
54 to 64 inches—weathered granitic rock

Annum, south slopes

Surface layer:
0 to 12 inches—dark grayish brown and grayish brown silt loam

Upper part of subsoil:
12 to 24 inches—brown and yellowish brown silt loam

Lower part of subsoil:
24 to 46 inches—strong brown clay loam

Substratum:
46 to 53 inches—light yellowish brown, calcareous gravelly sandy loam

Bedrock:
53 to 63 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Morical soils
• Ginnis soils
• Broadax soils

Major Uses

Livestock grazing, nonirrigated cropland, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• The soils in this unit are too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
• The soils in this unit are too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If the soils in this unit are used for irrigated crops, they are limited by steepness of slope and water erosion.

14—Apex silt loam, 5 to 20 percent slopes

Composition

Apex soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 5 to 20 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—dark brown silt loam

Upper part of subsoil:
3 to 13 inches—brown and yellowish brown silt loam

Lower part of subsoil:
13 to 30 inches—pale brown gravelly loam

Substratum:
30 to 60 inches—brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Nevine and Newbell soils
- Goddard and Kiehl soils
- Inkler soils
- Republic soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

15—Apex silt loam, 20 to 40 percent slopes

Composition

Apex soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—dark brown silt loam

Upper part of subsoil:
3 to 13 inches—brown and yellowish brown silt loam

Lower part of subsoil:
13 to 30 inches—pale brown gravelly loam

Substratum:
30 to 60 inches—brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained

Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Nevine and Newbell soils
- Goddard and Kiehl soils
- Inkler soils
- Republic soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

16—Apex silt loam, 40 to 65 percent slopes

Composition

Apex soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—dark brown silt loam

Upper part of subsoil:
3 to 13 inches—yellowish brown silt loam

Lower part of subsoil:
13 to 30 inches—pale brown gravelly loam

Substratum:
30 to 60 inches—brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Nevine and Newbell soils
- Goddard and Kiehl soils
- Inkler soils
- Republic soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitation for planting: Steepness of slope

17—Apex loam, dry, 5 to 20 percent slopes

Composition

Apex soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 5 to 20 percent
Elevation: 2,000 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown loam

Upper part of subsoil:
3 to 12 inches—brown loam

Lower part of subsoil:
12 to 27 inches—very pale brown gravelly sandy loam

Substratum:
27 to 60 inches—brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Mineral soils
- Stapaloop soils
- Nevine soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

18—Apex loam, dry, 20 to 40 percent slopes

Composition

Apex soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 20 to 40 percent
Elevation: 2,000 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown loam

Upper part of subsoil:
3 to 12 inches—brown loam

Lower part of subsoil:
12 to 27 inches—very pale brown gravelly sandy loam

Substratum:
27 to 60 inches—brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Mineral soils
- Stapaloop soils
- Nevine soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily
Limitations for planting: None

19—Apex loam, dry, 40 to 65 percent slopes

Composition

Apex soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Glacial till with a mantle of volcanic ash
Slope range: 40 to 65 percent
Elevation: 2,000 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown loam

Upper part of subsoil:
3 to 12 inches—brown loam

Lower part of subsoil:
12 to 27 inches—very pale brown gravelly sandy loam

Substratum:
27 to 60 inches—brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Mineral soils
- Stapaloop soils
- Donavan and Republic soils
- Inkler and Nevine soils
- Merkel soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily
Limitation for planting: Steepness of slope

20—Aquic Xerofluvents, cool, 0 to 3 percent slopes

Composition

Aquic Xerofluvents and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Flood plains and low stream terraces
Parent material: Alluvium underlain by reworked glacial outwash in some areas
Slope range: 0 to 3 percent
Elevation: 1,600 to 4,000 feet
Average annual precipitation: 18 to 23 inches
Average annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 120 days

Reference Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of substratum:
3 to 15 inches—yellowish brown fine sandy loam

Lower part of substratum:
15 to 60 inches—stratified extremely gravelly coarse sand to silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained and somewhat poorly drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through July (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Sanpoil soils

Major Uses

Timber production, livestock grazing, wildlife habitat, wetland wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western larch and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this unit is used for irrigated crops, it is limited by wetness.

21—Aquic Xerofluvents, moist, 0 to 3 percent slopes

Composition

Aquic Xerofluvents and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Flood plains and stream terraces
Parent material: Alluvium underlain by glacial outwash in some areas
Slope range: 0 to 3 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 120 days

Reference Profile

Surface layer:
0 to 5 inches—grayish brown sandy loam

Substratum:
5 to 15 inches—grayish brown very gravelly coarse sand
15 to 25 inches—light gray sand
25 to 35 inches—light gray silt loam
35 to 40 inches—light brownish gray very gravelly loamy sand
40 to 52 inches—light brownish gray gravelly loamy sand
52 to 60 inches—brown very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained and somewhat poorly drained
Permeability: Moderately rapid over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Severe
Water table: Present in January through July (see "Water Features" table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Sanpoil soils

Major Uses

Timber production, livestock grazing, recreation, watershed, wildlife habitat, and wetland wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western redcedar, Douglas-fir, and grand fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this unit is used for irrigated crops, it is limited by wetness.

22—Aquic Xerofluvents, warm, 0 to 3 percent slopes

Composition

Aquic Xerofluvents and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Flood plains and low stream terraces
Parent material: Alluvium underlain by reworked glacial outwash in some areas
Slope range: 0 to 3 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 14 to 18 inches
Average annual air temperature: 46 to 49 degrees F
Frost-free period: 100 to 130 days

Reference Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 15 inches—brown fine sandy loam

Upper part of substratum:
15 to 43 inches—yellowish brown fine sandy loam

Lower part of substratum:
43 to 60 inches—stratified extremely gravelly coarse sand to silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained and somewhat poorly drained
Permeability: Moderately rapid over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Severe
Water table: Present in January through July (see "Water Features" table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Soils that are frequently flooded
- Soils that are poorly drained or very poorly drained
- Riverwash

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this unit is used for irrigated crops, it is limited by wetness.

23—Badge very stony silt loam, 25 to 65 percent slopes

Composition

Badge soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of plateau escarpments
Parent material: Colluvium derived from basalt mixed with loess
Slope range: 25 to 65 percent
Elevation: 1,500 to 2,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 51 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Surface layer:
0 to 10 inches—dark grayish brown very stony silt loam

Upper part of subsoil:
10 to 23 inches—yellowish brown very gravelly clay loam

Lower part of subsoil:
23 to 38 inches—brown very stony clay loam

Substratum:
38 to 60 inches—light yellowish brown extremely cobbly silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Bakeoven soils
• Soils that have basalt at a depth of 10 to 40 inches
• Timentwa soils
• Rubble land
• Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices.
• Livestock tend to concentrate in the less steep areas of the unit.

24—Badge-Rubble land complex, 25 to 65 percent slopes

Composition

Badge soil and similar soils: 65 percent
Rubble land: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of plateau escarpments
Parent material: Colluvium derived from basalt mixed with loess
Slope range: 25 to 65 percent
Elevation: 1,600 to 2,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 51 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Badge—stones cover 3 to 15 percent

Badge Soil

Typical Profile

Surface layer:
0 to 10 inches—dark grayish brown very stony silt loam

Upper part of subsoil:
10 to 23 inches—yellowish brown very gravelly clay loam

Lower part of subsoil:
23 to 38 inches—brown very stony clay loam

Substratum:
38 to 60 inches—light yellowish brown extremely cobbly silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Rubble Land

Description of areas: Unconsolidated basalt gravel, cobbles, stones, and boulders

Contrasting Inclusions

- Bakeoven soils
- Timentwa soils
- Soils that have basalt at a depth of 20 to 40 inches
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices.
- Livestock tend to concentrate in the less steep areas of the unit.

25—Badland

This map unit consists of moderately steep to very steep, barren terrace escarpments dissected by many intermittent drainageways. Slopes range from 25 to 100 percent or more. The geologic material consists of highly eroded glacial lake sediment and loamy glaciofluvial material. Runoff is very rapid, and the hazard of water erosion is very severe. This unit supports little, if any, vegetation because of the rate of erosion. Included in this unit are small areas that support a very sparse cover of big sagebrush, bluebunch wheatgrass, and forbs.

26—Bakeoven very cobbly silt loam, 2 to 25 percent slopes

Composition

Bakeoven soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Plateaus
Parent material: Residuum and colluvium derived from basalt mixed with loess
Slope range: 2 to 25 percent
Elevation: 1,800 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 3 inches—brown very cobbly silt loam

Subsoil:
3 to 7 inches—brown very cobbly silt loam

Bedrock:
7 to 11 inches—basalt

Soil Properties and Qualities

Depth class: Very shallow (4 to 10 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 4 to 10 inches
Runoff: Slow
Hazard of water erosion: Rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have bedrock at a depth of 10 to 20 inches
- Anders soils
- Olical soils
- Timentwa soils
- Rock outcrop

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- The soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the

frostline, ponds are not feasible, and seeding and brush management are not practical.

27—Bakeoven-Olical complex, 0 to 30 percent slopes

Composition

Bakeoven soil and similar soils: 60 percent
Olical soil and similar soils: 25 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Bakeoven—basalt plateaus; Olical—mounds on basalt plateaus that have patterned ground topography
Parent material: Bakeoven—residuum and colluvium derived from basalt mixed with loess; Olical—loess mixed with material weathered from basalt
Slope range: 0 to 30 percent
Elevation: 2,300 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Bakeoven

Surface layer:
0 to 3 inches—brown very cobbly silt loam

Subsoil:
3 to 7 inches—brown very cobbly silt loam

Bedrock:
7 to 11 inches—basalt

Olical

Surface layer:
0 to 15 inches—brown silt loam

Upper part of subsoil:
15 to 23 inches—light yellowish brown silt loam

Middle part of subsoil:
23 to 38 inches—light yellowish brown, calcareous gravelly silt loam

Lower part of subsoil:
38 to 51 inches—light yellowish brown, calcareous gravelly loam

Bedrock:
51 to 55 inches—basalt

Soil Properties and Qualities

Depth class: Bakeoven—very shallow (4 to 10 inches to bedrock); Olical—deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Bakeoven—very low; Olical—high
Potential rooting depth: Bakeoven—4 to 10 inches; Olical—40 to 60 inches
Runoff: Slow or medium
Hazard of water erosion on rangeland: Bakeoven—slight; Olical—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Rock outcrop
- Soils that have bedrock at a depth of 10 to 20 inches
- Anders soils that have bedrock at a depth of 20 to 40 inches

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The Bakeoven soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.
- The Olical soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- The Olical soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

28—Bakeoven-Timentwa-Rock outcrop complex, 0 to 30 percent slopes

Composition

Bakeoven soil and similar soils: 40 percent
Timentwa soil and similar soils: 30 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Bakeoven—glacially scoured areas on basalt plateaus; Timentwa—glacial till plains and moraines on basalt plateaus
Parent material: Bakeoven—residuum and colluvium

derived from basalt mixed with loess; Timentwa—glacial till derived mainly from basalt with a mantle of loess and volcanic ash
Slope range: Bakeoven—0 to 30 percent; Timentwa—0 to 25 percent
Elevation: 2,200 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 140 days

Bakeoven Soil

Typical profile

Surface layer:
0 to 3 inches—brown very cobbly silt loam

Subsoil:
3 to 7 inches—brown very cobbly silt loam

Bedrock:
7 to 11 inches—basalt

Soil properties and qualities

Depth class: Very shallow (4 to 10 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 4 to 10 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight
Hazard of wind erosion (bare surface): Slight

Timentwa Soil

Typical profile

Surface layer:
0 to 18 inches—dark grayish brown and grayish brown loam

Upper part of subsoil:
18 to 28 inches—brown gravelly loam

Middle part of subsoil:
28 to 41 inches—pale brown gravelly loam

Lower part of subsoil:
41 to 56 inches—light brownish gray and pale brown, calcareous cobbly sandy loam

Substratum:
56 to 60 inches—light brownish gray hardpan

Soil properties and qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Basalt

Contrasting Inclusions

- Soils that are similar to the Timentwa soil but are moderately well drained
- Soils that have bedrock at a depth of 10 to 40 inches
- Soils that have a very gravelly subsoil
- Emdent soils
- Soils that have a hardpan at a depth of 20 to 40 inches
- Soils that have a bouldery or very bouldery surface

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The Bakeoven soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

29—Baldknob-Thout, dry-Rock outcrop complex, 5 to 20 percent slopes

Composition

Baldknob soil and similar soils: 40 percent
Thout soil and similar soils: 25 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and ridges of mountains
Parent material: Residuum and colluvium derived from rhyodacite and quartz latite with some glacial till and a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 2,200 to 4,200 feet
Average annual precipitation: 15 to 20 inches

Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Baldknob—stones cover 3 to 15 percent

Baldknob Soil

Typical profile

Surface layer:
0 to 4 inches—brown very stony loam

Upper part of subsoil:
4 to 9 inches—brown very gravelly loam

Lower part of subsoil:
9 to 14 inches—yellowish brown extremely gravelly loam

Bedrock:
14 to 18 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Slight or moderate
Hazard of wind erosion (bare surface): Slight
Snowpack: More than 1 foot—December through March; more than 3 feet—none

Thout Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly loam

Subsoil:
4 to 26 inches—pale brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Slight or moderate
Hazard of wind erosion (bare surface): Slight
Snowpack: More than 1 foot—December through March; more than 3 feet—none

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Inkler and Nevine soils
- Soils that have bedrock at a depth of 40 to 60 inches
- Lithic Xerochrepts
- Johntom and Northstar soils

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- The soils in this unit are too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

30—Baldknob-Thout, dry-Rock outcrop complex, 20 to 65 percent slopes

Composition

Baldknob soil and similar soils: 40 percent
Thout soil and similar soils: 25 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Residuum and colluvium derived from rhyodacite and quartz latite with some glacial till and a component of loess and volcanic ash
Slope range: 20 to 65 percent
Elevation: 2,200 to 4,200 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 46 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Baldknob—stones cover 3 to 15 percent

Baldknob Soil

Typical profile

Surface layer:
0 to 4 inches—brown very stony loam

Upper part of subsoil:
4 to 9 inches—brown very gravelly loam

Lower part of subsoil:
9 to 14 inches—yellowish brown extremely gravelly loam

Bedrock:
14 to 18 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium to very rapid
Hazard of water erosion: Moderate to very severe
Hazard of wind erosion (bare surface): Slight
Snowpack: More than 1 foot—December through March; more than 3 feet—none

Thout Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly loam

Subsoil:
4 to 26 inches—pale brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium to very rapid
Hazard of water erosion: Moderate to very severe
Hazard of wind erosion (bare surface): Slight
Snowpack: More than 1 foot—December through March; more than 3 feet—none

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Inkler and Nevine soils
- Soils that have bedrock at a depth of 40 to 60 inches
- Lithic Xerochrepts
- Johntom and Northstar soils

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soils in this unit are too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

31—Barnellcreek silt loam, 5 to 15 percent slopes

Composition

Barnellcreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 5 to 15 percent
Elevation: 3,200 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 26 inches—grayish brown and brown silt loam

Subsoil:
26 to 42 inches—yellowish brown gravelly sandy loam

Substratum:
42 to 60 inches—light gray dense glacial till that crushes to very gravelly sandy loam

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to dense glacial till)
Drainage class: Moderately well drained
Permeability: Moderate over slow

Available water capacity: High
Effective rooting depth: 40 to 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through May (see "Water Features" table)

Contrasting Inclusions

- Koepke soils
- Republic soils
- Louploup soils
- Nevine soils
- Ret soils

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine, western larch, and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

32—Bearspring loam, 20 to 40 percent slopes

Composition

Bearspring soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 43 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 12 inches—grayish brown and brown loam

Upper part of subsoil:
12 to 22 inches—pale brown gravelly loam

Lower part of subsoil:
22 to 35 inches—pale brown very gravelly sandy loam

Upper part of substratum:
35 to 50 inches—light yellowish brown very cobbly sandy loam

Lower part of substratum:
50 to 60 inches—light yellowish brown very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Dinkelman soils
- Mineral soils
- Ohscow and Canteen soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine—periodically
Limitations for planting: None

33—Bearspring cobbly loam, 40 to 65 percent slopes

Composition

Bearspring soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,900 to 4,600 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 43 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 6 inches—grayish brown cobbly loam

Lower part of surface layer:
6 to 11 inches—brown gravelly loam

Upper part of subsoil:
11 to 19 inches—pale brown gravelly loam

Lower part of subsoil:
19 to 27 inches—pale brown very gravelly sandy loam

Upper part of substratum:
27 to 50 inches—pale brown very cobbly sandy loam

Lower part of substratum:
50 to 60 inches—light yellowish brown extremely gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Dinkelman soils
- Mineral soils
- Ohscow and Canteen soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

34—Bernhill loam, dry, 0 to 5 percent slopes

Composition

Bernhill soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ground moraines and till plains
Parent material: Glacial till, including glacial lake sediment mixed with volcanic ash and loess
Slope range: 0 to 5 percent
Elevation: 1,500 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown loam

Upper part of subsoil:
4 to 14 inches—pale brown loam

Subsurface layer:
14 to 27 inches—light gray loam

Lower part of subsoil:
27 to 36 inches—light yellowish brown clay loam

Substratum:
36 to 60 inches—light gray gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Glenrose and Hunters soils
- Donavan soils
- Cedonia soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by water erosion.

35—Bernhill loam, dry, 5 to 20 percent slopes

Composition

Bernhill soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Till plains, ground moraines, and toeslopes of hills
Parent material: Glacial till derived from mixed sources, including glacial lake sediment with volcanic ash and loess
Slope range: 5 to 20 percent
Elevation: 1,500 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown loam

Upper part of subsoil:
4 to 14 inches—pale brown loam

Subsurface layer:
14 to 27 inches—light gray loam

Lower part of subsoil:
27 to 36 inches—light yellowish brown clay loam

Substratum:
36 to 60 inches—light gray gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Hudnut soils
- Donavan soils
- Neuske soils
- Apex soils
- Republic soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

36—Beverly gravelly loamy sand, 2 to 25 percent slopes

Composition

Beverly soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans
Parent material: Recent alluvium
Slope range: 2 to 25 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 6 inches—brown gravelly loamy sand

Upper part of substratum:
6 to 17 inches—pale brown gravelly loamy sand

Middle part of substratum:
17 to 31 inches—pale brown very gravelly sand

Lower part of substratum:
31 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe
Frequency of flooding: Rare

Contrasting Inclusions

- Quincy soils
- Pogue soils
- Aeneas soils
- Strat soils
- Cashmere soils
- Cashmont soils

Major Uses

Livestock grazing, irrigated hay and pasture, irrigated orchards, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

• This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
• This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

37—Bisbee loamy fine sand, warm, 0 to 20 percent slopes

Composition

Bisbee soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces
Parent material: Sandy glacial outwash locally reworked by wind
Slope range: 0 to 20 percent
Elevation: 1,400 to 3,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown loamy fine sand

Upper part of substratum:
5 to 40 inches—pale brown and very pale brown loamy fine sand

Lower part of substratum:
40 to 60 inches—light gray loamy fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Sacheen soils
- Hudnut soils
- Scala soils
- Karamin soils
- Springdale soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and fast infiltration.

38—Bisbee loamy fine sand, warm, 20 to 40 percent slopes

Composition

Bisbee soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Sandy glacial outwash locally reworked by wind
Slope range: 20 to 40 percent
Elevation: 1,400 to 3,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown loamy fine sand

Upper part of substratum:
5 to 40 inches—pale brown and very pale brown loamy fine sand

Lower part of substratum:
40 to 60 inches—light gray loamy fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Sacheen soils
- Hudnut soils
- Scala soils
- Karamin soils
- Springdale soils that have a very gravelly sand substratum

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

39—Boesel fine sandy loam, 0 to 3 percent slopes

Composition

Boesel soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Stream terraces and flood plains
Parent material: Alluvium
Slope range: 0 to 3 percent
Elevation: 1,600 to 3,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Upper part of surface layer:
0 to 13 inches—dark brown fine sandy loam

Lower part of surface layer:
13 to 20 inches—brown fine sandy loam

Upper part of substratum:
20 to 29 inches—brown gravelly loamy sand

Lower part of substratum:
29 to 60 inches—brown very gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—none or slight
Hazard of wind erosion (bare surface): Moderate
Water table: Present in February through May (see "Water Features" table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Cubcreek soils
- Soils that are very gravelly sand below a depth of about 14 inches
- Aquic Xerofluvents and Ret soils

Major Uses

Current uses: Timber production, livestock grazing, nonirrigated hay and pasture, watershed, wildlife habitat, and recreation
Potential uses: Nonirrigated cropland, irrigated cropland, and irrigated hay and pasture

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wind erosion and droughtiness.

40—Bong sandy loam, 0 to 30 percent slopes

Composition

Bong soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash mixed with a minor component of loess
Slope range: 0 to 30 percent
Elevation: 1,500 to 3,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—dark grayish brown sandy loam

Upper part of subsoil:
8 to 17 inches—yellowish brown sandy loam

Lower part of subsoil:
17 to 24 inches—light yellowish brown gravelly loamy coarse sand

Substratum:
24 to 60 inches—light yellowish brown sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Donavan soils
- Springdale soils
- Hudnut soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and wind erosion.

41—Bong sandy loam, 30 to 70 percent slopes

Composition

Bong soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash mixed with a minor component of loess
Slope range: 30 to 70 percent
Elevation: 1,500 to 3,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—dark grayish brown sandy loam

Upper part of subsoil:
8 to 17 inches—yellowish brown sandy loam

Lower part of subsoil:
17 to 24 inches—light yellowish brown gravelly loamy coarse sand

Substratum:
24 to 60 inches—light yellowish brown sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Donavan soils
- Springdale soils
- Hudnut soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Steepness of slope

42—Bong sandy loam, cool, 0 to 8 percent slopes

Composition

Bong soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with a minor component of loess
Slope range: 0 to 8 percent
Elevation: 1,500 to 3,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 46 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 13 inches—grayish brown and brown sandy loam

Subsoil:
13 to 21 inches—pale brown sandy loam

Upper part of substratum:
21 to 33 inches—light yellowish brown gravelly loamy coarse sand

Lower part of substratum:
33 to 60 inches—light yellowish brown sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Garrison soils
- Bisbee soils
- Springdale soils
- Hudnut soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and wind erosion.

43—Borgeau loam, 8 to 30 percent slopes

Composition

Borgeau soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of foothills
Parent material: Glacial till and colluvium derived from metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 8 to 30 percent
Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—very dark grayish brown loam

Subsoil:
9 to 17 inches—brown very gravelly loam

Upper part of substratum:
17 to 34 inches—light yellowish brown very gravelly loam

Lower part of substratum:
34 to 60 inches—light yellowish brown extremely gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Raisio soils
- Rufus soils
- Stevens soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope and water erosion.

44—Borgeau loam, 30 to 65 percent slopes

Composition

Borgeau soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills
Parent material: Glacial till and colluvium derived from metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—very dark grayish brown loam

Subsoil:
9 to 17 inches—brown very gravelly loam

Upper part of substratum:
17 to 34 inches—light yellowish brown very gravelly loam

Lower part of substratum:
34 to 60 inches—light yellowish brown extremely gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe

Contrasting Inclusions

- Raisio soils
- Stevens soils that are thick and have fewer rock fragments in the substratum
- Rock outcrop

Major Uses

Current uses: Livestock grazing, recreation, watershed, and wildlife habitat
Potential use: Timber production

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

45—Borgeau-Rock outcrop complex, 30 to 65 percent slopes

Composition

Borgeau soil and similar soils: 55 percent
Rock outcrop: 25 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of hills
Parent material: Glacial till and colluvium derived from metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent

Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Borgeau Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—very dark grayish brown loam

Subsoil:
9 to 17 inches—dark brown very gravelly loam

Upper part of substratum:
17 to 34 inches—light yellowish brown very gravelly loam

Lower part of substratum:
34 to 60 inches—light yellowish brown extremely gravelly loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe

Rock Outcrop

Kind of rock: Phyllite, schist, slate, and graywacke

Contrasting Inclusions

- Raisio soils
- Rufus soils
- Stevens soils

Major Uses

Current uses: Livestock grazing, recreation, watershed, and wildlife habitat
Potential use: Timber production

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

46—Borosaprists, 0 to 2 percent slopes

Composition

Borosaprists and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Lake basins, and depressions in till plains, ground moraines, and terraces
Parent material: Decomposed organic material over alluvium or glacial lake sediment
Slope range: 0 to 2 percent
Elevation: 2,800 to 5,000 feet
Average annual precipitation: 17 to 30 inches
Average annual air temperature: 41 to 44 degrees F
Frost-free period: 80 to 100 days

Reference Profile

Surface tier:
0 to 8 inches—grayish brown mucky peat

Subsurface tier:
8 to 18 inches—very dark gray muck

Surface layer:
18 to 34 inches—very dark brown silt loam

Upper part of substratum:
34 to 44 inches—light brownish gray silt loam

Lower part of substratum:
44 to 55 inches—light gray fine sandy loam

Bottom tier:
55 to 60 inches—black muck

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Ponded for long periods in February through May
Hazard of water erosion: None
Water table: Present in January through December (see “Water Features” table)

Contrasting Inclusions

- Andic Cryaquepts and Sanpoil soils
- Aquic Xerofluvents, Cryofluvents, and Ret soils

Major Uses

Wetland wildlife habitat (fig. 4) and watershed

Figure 4.—Area of Borosaprists, 0 to 2 percent slopes, that supports emergent wetland vegetation. Wellscreek soils are on forested mountainside in background.

47—Bossburg muck, 0 to 2 percent slopes

Composition

Bossburg soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backswamps of flood plains, and depressions

Parent material: Alluvium derived from volcanic ash
Slope range: 0 to 2 percent
Elevation: 1,600 to 2,800 feet
Average annual precipitation: 12 to 18 inches
Average annual air temperature: 45 to 49 degrees F
Frost-free period: 100 to 150 days

Typical Profile

Upper part of surface layer:
0 to 6 inches—dark gray muck

Lower part of surface layer:
6 to 13 inches—gray silt loam

Upper part of substratum:
13 to 29 inches—light gray and white silt loam

Middle part of substratum:
29 to 45 inches—light gray fine sandy loam

Lower part of substratum:
45 to 60 inches—white very fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Ponded
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—none; forestland—none
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through December (see “Water Features” table)
Frequency, duration, and period of flooding: Frequent, long periods in February through May

Contrasting Inclusions

- Soils that are calcareous in the surface layer
- Narcisse and Poween soils
- Emdent soils
- Soils that are sandy below a depth of about 25 inches

Major Uses

Nonirrigated hay and pasture, wetland wildlife habitat, livestock grazing, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable during the short periods when the soil is dry; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen, paper birch, and thinleaf alder—readily
Limitation for planting: Seasonal high water table

48—Broadax silt loam, dry, 0 to 8 percent slopes

Composition

Broadax soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Broad summits of hills and plateaus
Parent material: Loess
Slope range: 0 to 8 percent
Elevation: 2,500 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 11 inches—grayish brown silt loam

Upper part of subsoil:
11 to 17 inches—brown silt loam

Middle part of subsoil:
17 to 38 inches—yellowish brown, calcareous silt loam

Lower part of subsoil:
38 to 60 inches—yellowish brown, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Annum soils
- Morical soils
- Anders soils

Major Uses

Nonirrigated cropland, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope.

49—Broadax silt loam, dry, 8 to 15 percent slopes

Composition

Broadax soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Broad summits of hills and plateaus
Parent material: Loess
Slope range: 8 to 15 percent
Elevation: 2,500 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 11 inches—grayish brown silt loam

Upper part of subsoil:
11 to 17 inches—brown silt loam

Middle part of subsoil:
17 to 38 inches—yellowish brown, calcareous silt loam

Lower part of subsoil:
38 to 60 inches—yellowish brown, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Annum soils
• Morical soils
• Anders soils

Major Uses

Nonirrigated cropland, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• There are no significant limitations for management of this soil for this use.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

50—Brusher silt loam, 20 to 40 percent slopes

Composition

Brusher soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes of mountains
Parent material: Volcanic ash over highly weathered colluvium and residuum derived from granitic and porphyritic volcanic rock
Slope range: 20 to 40 percent
Elevation: 2,300 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 9 inches—yellowish brown silt loam

Subsurface layer:
9 to 14 inches—light yellowish brown loam

Middle part of subsoil:
14 to 24 inches—yellowish brown and light yellowish brown loam

Lower part of subsoil:
24 to 50 inches—brown clay loam

Substratum:
50 to 60 inches—multicolored gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: High

Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—very severe; forestland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Moscow soils
- Soils that do not have volcanic ash in the surface layer
- Friedlander soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

51—Brusher silt loam, moist, 5 to 35 percent slopes

Composition

Brusher soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Concave footslopes and toeslopes of mountains
Parent material: Volcanic ash over highly weathered residuum, colluvium, and valley fill derived from granitic and porphyritic volcanic rock
Slope range: 5 to 35 percent
Elevation: 2,600 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 5 inches thick

Surface layer:
0 to 5 inches—grayish brown and brown silt loam

Upper part of subsoil:
5 to 17 inches—pale brown silt loam

Middle part of subsoil:
17 to 37 inches—pale brown and yellowish brown loam and sandy loam
37 to 51 inches—very pale brown sandy loam

Lower part of subsoil:
51 to 56 inches—pale brown loam

Substratum:
56 to 60 inches—multicolored gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate to very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Aquic Xerofluvents
- Centralpeak and Moscow soils
- Canteen soils
- Dinkelman soils
- Soils that are somewhat poorly drained or poorly drained

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

52—Brusher silt loam, warm, 0 to 20 percent slopes

Composition

Brusher soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes of mountains
Parent material: Volcanic ash over highly weathered colluvium and residuum derived from granitic and porphyritic volcanic rock
Slope range: 0 to 20 percent
Elevation: 2,300 to 3,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 9 inches—yellowish brown silt loam

Subsurface layer:
9 to 14 inches—light yellowish brown loam

Middle part of subsoil:
14 to 24 inches—yellowish brown and light yellowish brown loam

Lower part of subsoil:
24 to 50 inches—brown clay loam

Substratum:
50 to 60 inches—multicolored gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow to rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Centralpeak soils
• Soils that do not have volcanic ash in the surface layer
• Friedlander soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

53—Brusher silt loam, warm, 20 to 40 percent slopes

Composition

Brusher soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes of mountains
Parent material: Volcanic ash over highly weathered colluvium and residuum derived from granitic and porphyritic volcanic rock
Slope range: 20 to 40 percent
Elevation: 2,300 to 3,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 9 inches—yellowish brown silt loam

Subsurface layer:
9 to 14 inches—light yellowish brown loam

Middle part of subsoil:
14 to 24 inches—yellowish brown and light yellowish brown loam

Lower part of subsoil:
24 to 50 inches—brown clay loam

Substratum:
50 to 60 inches—multicolored gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Centralpeak soils
- Soils that do not have volcanic ash in the surface layer
- Friedlander soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

54—Buhrig very stony loam, 20 to 40 percent slopes

Composition

Buhrig soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, shoulders, and backslopes of mountains
Parent material: Residuum and colluvium derived from granitic rock, gneiss, and quartzite with a mantle of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 4,000 to 6,500 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 7 inches—light yellowish brown very stony loam

Subsoil:
7 to 18 inches—light yellowish brown very cobbly loam

Substratum:
18 to 32 inches—light yellowish brown very cobbly sandy loam

Bedrock:
32 to 36 inches—gneiss

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Medium
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate

Contrasting Inclusions

- Codylake soils
- Manley soils
- Mineral soils
- Pole soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir—readily; Douglas-fir and lodgepole pine—periodically
Limitation for planting: Rock fragments in the soil

55—Buhrig very stony loam, 40 to 65 percent slopes

Composition

Buhrig soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Colluvium derived from granitic rock, gneiss, and quartzite with a mantle of volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 4,000 to 6,500 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 7 inches—light yellowish brown very stony loam

Subsoil:
7 to 18 inches—light yellowish brown very cobbly loam

Substratum:
18 to 32 inches—light yellowish brown very cobbly sandy loam

Bedrock:
32 to 36 inches—gneiss

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Codylake soils
- Manley soils
- Mineral soils
- Pole soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir—readily; Douglas-fir and lodgepole pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

56—Buhrig silt loam, shaly substratum, 30 to 65 percent slopes

Composition

Buhrig soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Residuum and colluvium derived from metasedimentary rock with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 30 to 65 percent
Elevation: 4,000 to 4,700 feet
Average annual precipitation: 22 to 25 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—yellowish brown silt loam

Subsoil:
4 to 13 inches—light yellowish brown silt loam

Upper part of substratum:
13 to 20 inches—pale brown extremely flaggy loam

Lower part of substratum:
20 to 31 inches—pale brown extremely channery loam

Bedrock:
31 to 35 inches—graywacke

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Hartill soils
- Wilmont soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Grand fir and subalpine fir—readily; Douglas-fir and western larch—periodically

57—Buhrig-Rock outcrop complex, 20 to 40 percent slopes

Composition

Buhrig soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, shoulders, and backslopes of mountains
Parent material: Residuum and colluvium derived from granitic rock, gneiss, and quartzite with a mantle of volcanic ash
Slope range: 20 to 40 percent
Elevation: 4,000 to 6,500 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days
Rock fragments on surface: Buhrig—stones cover 3 to 15 percent

Buhrig Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 7 inches—light yellowish brown very stony loam

Subsoil:
7 to 18 inches—light yellowish brown very cobbly loam

Substratum:
18 to 32 inches—light yellowish brown very cobbly sandy loam

Bedrock:
32 to 36 inches—gneiss

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Medium
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate

Rock Outcrop

Kind of rock: Granitic rock, gneiss, diorite, and quartzite

Contrasting Inclusions

- Codylake soils
- Manley soils
- Mineral soils
- Pole soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir—readily; Douglas-fir and lodgepole pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

58—Buhrig-Rock outcrop complex, 40 to 65 percent slopes

Composition

Buhrig soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Colluvium derived from granitic rock, gneiss, and quartzite with a mantle of volcanic ash
Slope range: 40 to 65 percent
Elevation: 4,000 to 6,500 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days
Rock fragments on surface: Stones cover 3 to 15 percent

Buhrig Soil

Typical profile

Surface layer:
0 to 7 inches—light yellowish brown very stony loam

Subsoil:
7 to 18 inches—light yellowish brown very cobbly loam

Substratum:
18 to 32 inches—light yellowish brown very cobbly sandy loam

Bedrock:
32 to 36 inches—gneiss

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe

Rock Outcrop

Kind of rock: Granitic rock, gneiss, diorite, and quartzite

Contrasting Inclusions

- Codylake soils
- Manley soils
- Mineral soils
- Pole soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir—

readily; Douglas-fir and lodgepole pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

59—Canteen silt loam, 20 to 40 percent slopes

Composition

Canteen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,100 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 13 inches—pale brown loam

Middle part of subsoil:
13 to 21 inches—very pale brown sandy loam

Lower part of subsoil:
21 to 34 inches—very pale brown coarse sandy loam

Substratum:
34 to 45 inches—very pale brown loamy coarse sand

Bedrock:
45 to 55 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Ohscow soils
- Centralpeak soils
- Codylake soils
- Mineral soils
- Dinkelman soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and lodgepole pine—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

60—Canteen silt loam, 40 to 65 percent slopes

Composition

Canteen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 2,100 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 13 inches—pale brown loam

Middle part of subsoil:
13 to 21 inches—very pale brown sandy loam

Lower part of subsoil:
21 to 34 inches—very pale brown coarse sandy loam

Substratum:
34 to 45 inches—very pale brown loamy coarse sand

Bedrock:
45 to 55 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Ohscow soils
- Centralpeak soils
- Codylake soils
- Mineral soils
- Dinkelman soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and lodgepole pine—readily; ponderosa pine and western larch—periodically
Limitation for planting: Steepness of slope

61—Canteen silt loam, cool, 20 to 40 percent slopes

Composition

Canteen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,500 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 5 inches—pale brown silt loam

Upper part of subsoil:
5 to 14 inches—light yellowish brown silt loam

Lower part of subsoil:
14 to 27 inches—pale brown sandy loam

Substratum:
27 to 50 inches—very pale brown and light yellowish brown gravelly loamy sand

Bedrock:
50 to 60 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe or very severe

Contrasting Inclusions

- Ohscow soils
- Centralpeak and Moscow soils
- Codylake soils
- Mineral soils

Major Uses

Current uses: Timber production, livestock grazing, watershed, and wildlife habitat
Potential use: Nonirrigated hay and pasture

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

62—Canteen silt loam, cool, 40 to 65 percent slopes

Composition

Canteen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 2,500 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 5 inches—pale brown silt loam

Upper part of subsoil:
5 to 14 inches—light yellowish brown silt loam

Lower part of subsoil:
14 to 27 inches—pale brown sandy loam

Substratum:
27 to 50 inches—very pale brown and light yellowish brown gravelly loamy sand

Bedrock:
50 to 60 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Ohscow soils
- Centralpeak soils
- Codylake soils
- Mineral soils

Major Uses

Timber production, livestock grazing, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Steepness of slope

63—Capoose silt loam, 20 to 40 percent slopes

Composition

Capoose soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Volcanic ash mantle over colluvium and glacial till derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 3,000 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 5 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 7 inches—yellowish brown silt loam

Middle part of subsoil:
7 to 17 inches—light yellowish brown loam

Lower part of subsoil:
17 to 25 inches—light yellowish brown very gravelly sandy loam

Substratum:
25 to 35 inches—very pale brown extremely gravelly sandy loam

Bedrock:
35 to 39 inches—granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and December
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Mineral soils
- Pole soils
- Nevine soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

64—Capoose silt loam, 40 to 65 percent slopes

Composition

Capoose soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Volcanic ash mantle over colluvium and glacial till derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 3,000 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 5 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 7 inches—yellowish brown silt loam

Middle part of subsoil:
7 to 17 inches—light yellowish brown loam

Lower part of subsoil:
17 to 25 inches—light yellowish brown very gravelly sandy loam

Substratum:
25 to 35 inches—very pale brown extremely gravelly sandy loam

Bedrock:
35 to 39 inches—granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Mineral soils
- Pole soils
- Nevine soils

- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Steepness of slope

65—Capoose-Rock outcrop complex, 20 to 40 percent slopes

Composition

Capoose soil and similar soils: 65 percent
Rock outcrop: 15 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Volcanic ash mantle over colluvium and glacial till derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 3,000 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Capoose Soil

Typical profile

Organic mat on surface: 5 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 7 inches—yellowish brown silt loam

Middle part of subsoil:
7 to 17 inches—light yellowish brown loam

Lower part of subsoil:
17 to 25 inches—light yellowish brown very gravelly sandy loam

Substratum:
25 to 35 inches—very pale brown extremely gravelly sandy loam

Bedrock:
35 to 39 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Mineral soils
- Pole soils
- Nevine soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Rock outcrop

66—Capoose-Rock outcrop complex, 40 to 65 percent slopes

Composition

Capoose soil and similar soils: 60 percent

Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Volcanic ash mantle over colluvium and glacial till derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 3,000 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Capoose Soil

Typical profile

Organic mat on surface: 5 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 7 inches—yellowish brown silt loam

Middle part of subsoil:
7 to 17 inches—light yellowish brown loam

Lower part of subsoil:
17 to 25 inches—light yellowish brown very gravelly sandy loam

Substratum:
25 to 35 inches—very pale brown extremely gravelly sandy loam

Bedrock:
35 to 39 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Mineral soils
- Pole soils
- Nevine soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: Rock outcrop and steepness of slope

67—Cashmere fine sandy loam, 0 to 5 percent slopes

Composition

Cashmere soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glaciofluvial material with a component of loess
Slope range: 0 to 5 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown fine sandy loam

Subsoil:
10 to 36 inches—brown and pale brown fine sandy loam

Upper part of substratum:
36 to 46 inches—pale brown sandy loam

Lower part of substratum:
46 to 60 inches—pale brown fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Farrell soils
- Pogue soils
- Aeneas soils
- Cashmont soils
- Malott soils
- Quincy soils

Major Uses

Irrigated orchards, irrigated cropland, irrigated hay and pasture, nonirrigated cropland, livestock grazing, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

68—Cashmere fine sandy loam, 5 to 10 percent slopes

Composition

Cashmere soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glaciofluvial material with a component of loess
Slope range: 5 to 10 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown fine sandy loam

Subsoil:
10 to 36 inches—brown and pale brown fine sandy loam

Upper part of substratum:
36 to 46 inches—pale brown sandy loam

Lower part of substratum:
46 to 60 inches—pale brown fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Farrell soils
- Pogue soils
- Aeneas soils
- Cashmont soils
- Malott soils
- Quincy soils

Major Uses

Irrigated orchards, irrigated cropland, irrigated hay and pasture, nonirrigated cropland, livestock grazing, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion and steepness of slope.

69—Cashmere fine sandy loam, 10 to 25 percent slopes

Composition

Cashmere soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces

Parent material: Glaciofluvial material with a component of loess
Slope range: 10 to 25 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown fine sandy loam

Subsoil:
10 to 36 inches—brown and pale brown fine sandy loam

Upper part of substratum:
36 to 46 inches—pale brown sandy loam

Lower part of substratum:
46 to 60 inches—pale brown fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—moderate; rangeland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Farrell soils
- Pogue soils
- Aeneas soils
- Cashmont soils
- Quincy soils

Major Uses

Irrigated orchards, irrigated cropland, irrigated hay and pasture, nonirrigated cropland, livestock grazing, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion and steepness of slope.

70—Cashmere fine sandy loam, 25 to 50 percent slopes

Composition

Cashmere soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glaciofluvial material with a component of loess
Slope range: 25 to 50 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown fine sandy loam

Subsoil:
10 to 36 inches—brown and pale brown fine sandy loam

Upper part of substratum:
36 to 46 inches—pale brown sandy loam

Lower part of substratum:
46 to 60 inches—pale brown fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Farrell soils
- Pogue soils
- Aeneas soils
- Cashmont soils
- Malott soils
- Quincy soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, or brush management using ground equipment.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

71—Cashmont gravelly sandy loam, fan, 3 to 15 percent slopes

Composition

Cashmont soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans
Parent material: Alluvium mixed with loess
Slope range: 3 to 15 percent
Elevation: 850 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 19 inches—dark grayish brown gravelly sandy loam

Upper part of subsoil:
19 to 30 inches—brown gravelly coarse sandy loam

Lower part of subsoil:
30 to 38 inches—yellowish brown gravelly sandy loam

Substratum:
38 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Moderate
Frequency of flooding: Rare

Contrasting Inclusions

- Soils that have a stony surface
- Aeneas soils
- Logy soils
- Pogue soils
- Skaha soils
- Quincy soils

Major Uses

Livestock grazing, irrigated hay and pasture, irrigated orchards, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope.

72—Cashmont gravelly sandy loam, fan, 15 to 30 percent slopes

Composition

Cashmont soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans
Parent material: Alluvium mixed with loess
Slope range: 15 to 30 percent
Elevation: 850 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 19 inches—dark grayish brown gravelly sandy loam

Upper part of subsoil:
19 to 30 inches—brown gravelly coarse sandy loam

Lower part of subsoil:
30 to 38 inches—yellowish brown gravelly sandy loam

Substratum:
38 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Cropland—moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Soils that have a stony surface
- Aeneas soils that have a sandy substratum
- Logy soils
- Pogue soils
- Skaha soils
- Quincy soils

Major Uses

Livestock grazing, irrigated hay and pasture and orchards, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope.

73—Cedonia silt loam, 0 to 5 percent slopes

Composition

Cedonia soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 0 to 5 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 24 inches—light brownish gray silt loam

Lower part of subsoil:
24 to 40 inches—light gray silt loam

Substratum:
40 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Bisbee soils
- Phoebe soils
- Donavan soils
- Hodgson soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland and hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by water erosion.

74—Cedonia silt loam, 5 to 15 percent slopes

Composition

Cedonia soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 5 to 15 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 24 inches—light brownish gray silt loam

Lower part of subsoil:
24 to 40 inches—light gray silt loam

Substratum:
40 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Bisbee soils
• Phoebe soils
• Donavan soils
• Hodgson soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, recreation, watershed, wildlife habitat, and building site development

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

75—Cedonia silt loam, 15 to 30 percent slopes

Composition

Cedonia soil and similar soils: 75 percent
Contrasting inclusions: 25 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 15 to 30 percent
Elevation: 1,300 to 2,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 24 inches—light brownish gray silt loam

Lower part of subsoil:
24 to 50 inches—light gray silt loam

Substratum:
50 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Spokane soils
- Bisbee soils
- Donavan soils
- Hodgson soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

76—Cedonia silt loam, 30 to 65 percent slopes

Composition

Cedonia soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 24 inches—light brownish gray silt loam

Lower part of subsoil:
24 to 50 inches—light gray silt loam

Substratum:
50 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Donavan soils
- Lakesol soils
- Hodgson soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitation for planting: Steepness of slope

77—Centralpeak loams association, 5 to 20 percent slopes

Composition

Centralpeak soil and similar soils: 45 percent
Centralpeak soil, warm, and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges and shoulders of mountains
Parent material: Granitic residuum and colluvium with a mantle of volcanic ash and loess
Slope range: 5 to 20 percent
Elevation: 2,200 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Centralpeak

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—brown loam

Upper part of subsoil:
6 to 16 inches—light yellowish brown loam

Lower part of subsoil:
16 to 21 inches—brown gravelly coarse sandy loam

Substratum:
21 to 25 inches—brown gravelly loamy coarse sand

Bedrock:
25 to 35 inches—weathered granitic rock

Centralpeak, warm

Organic mat on the surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of the subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Ohscow soils
- Dinkelman soils
- Mineral soils
- Spokane soils
- Codylake soils
- Skanid soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration (Centralpeak): Douglas fir—readily; ponderosa pine and western larch—periodically
Potential for natural regeneration (Centralpeak, warm): Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If the soils in this unit are used for irrigated crops, they are limited by rooting depth, steepness of slope, and water erosion.

78—Centralpeak loams association, 20 to 40 percent slopes

Composition

Centralpeak soil and similar soils: 45 percent

Centralpeak soil, warm, and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Granitic residuum and colluvium with a mantle of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,200 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Centralpeak

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—brown loam

Upper part of subsoil:
6 to 16 inches—light yellowish brown loam

Lower part of subsoil:
16 to 21 inches—brown gravelly coarse sandy loam

Substratum:
21 to 25 inches—brown gravelly loamy coarse sand

Bedrock:
25 to 35 inches—weathered granitic rock

Centralpeak, warm

Organic mat on the surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of the subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe

Contrasting Inclusions

- Ohscow soils
- Dinkelman soils
- Mineral soils
- Spokane soils
- Codylake soils
- Skanid soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration (Centralpeak): Douglas-fir—readily; ponderosa pine and western larch—periodically
Potential for natural regeneration (Centralpeak, warm): Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Limitations for planting: None

79—Centralpeak loams association, 40 to 65 percent slopes

Composition

Centralpeak soil and similar soils: 45 percent
Centralpeak soil, warm, and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Granitic residuum and colluvium with a mantle of volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 2,200 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Centralpeak

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—brown loam

Upper part of subsoil:
6 to 16 inches—light yellowish brown loam

Lower part of subsoil:
16 to 21 inches—brown gravelly coarse sandy loam

Substratum:
21 to 25 inches—brown gravelly loamy coarse sand

Bedrock:
25 to 35 inches—weathered granitic rock

Centralpeak, warm

Organic mat on the surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of the subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Ohscow soils
- Dinkelman soils
- Mineral soils
- Spokane soils
- Codylake soils
- Skanid soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration (Centralpeak): Douglas-fir—readily; ponderosa pine and western larch—periodically
Potential for natural regeneration (Centralpeak, warm): Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Limitation for planting: Steepness of slope

80—Centralpeak loam, warm, 5 to 20 percent slopes

Composition

Centralpeak soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, footslopes, and shoulders of mountains
Parent material: Colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 5 to 20 percent
Elevation: 2,400 to 4,200 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Dinkelman and Canteen soils
- Skanid soils
- Mineral soils
- Spokane soils
- Soils that are sandy throughout
- Soils that have a stony or bouldery surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by rooting depth, steepness of slope, and water erosion.

81—Centralpeak loam, warm, 20 to 40 percent slopes

Composition

Centralpeak soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes, backslopes, and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,400 to 4,200 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe

Contrasting Inclusions

- Dinkelman and Canteen soils
- Skanid soils

- Mineral soils
- Spokane soils
- Soils that are sandy throughout
- Soils that have a stony or bouldery surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Limitations for planting: None

82—Centralpeak loam, warm, 40 to 65 percent slopes

Composition

Centralpeak soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 2,400 to 4,200 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Dinkelman and Canteen soils
- Mineral soils
- Spokane and Skanid soils
- Soils that are sandy throughout
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Limitation for planting: Steepness of slope

83—Centralpeak, warm-Brusher, moist complex, 5 to 30 percent slopes

Composition

Centralpeak soil and similar soils: 65 percent
Brusher soil and similar soils: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Centralpeak—footslopes and toeslopes of hills and mountains; Brusher—concave footslopes and toeslopes of hills and mountains
Parent material: Centralpeak—colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess; Brusher—volcanic ash over highly weathered colluvium, residuum, and valley fill derived from granitic rock
Slope range: 5 to 30 percent
Elevation: 2,600 to 3,400 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Centralpeak

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Brusher

Organic mat on the surface: 5 inches thick

Surface layer:
0 to 5 inches—grayish brown and brown silt loam

Upper part of subsoil:
5 to 17 inches—pale brown silt loam

Middle part of subsoil:
17 to 37 inches—pale brown and yellowish brown loam and sandy loam
37 to 51 inches—very pale brown sandy loam

Lower part of the subsoil:
51 to 56 inches—pale brown loam

Substratum:
56 to 60 inches—multicolored gravelly coarse sand

Soil Properties and Qualities

Depth class: Centralpeak—moderately deep (20 to 40 inches to bedrock); Brusher—very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Centralpeak—moderate; Brusher—high
Potential rooting depth: Centralpeak—20 to 40 inches; Brusher—more than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Canteen and Dinkelman soils
- Soils that are somewhat poorly drained or poorly drained and are in dissected side drainageways (seep areas)
- Mineral soils
- Soils that have weathered granitic rock at a depth of 10 to 20 inches
- Soils that have a stony or very stony surface
- Aquic Xerofluvents

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration (Centralpeak): Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Potential for natural regeneration (Brusher): Douglas-fir, grand fir, and western larch—readily
Limitations for planting: None

Irrigated Cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope and water erosion and by rooting depth of the Centralpeak soil.

84—Centralpeak-Rock outcrop association, 30 to 65 percent slopes

Composition

Centralpeak soil and similar soils: 35 percent
Centralpeak soil, warm, and similar soils: 30 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess
Slope range: 30 to 65 percent
Elevation: 2,200 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Centralpeak Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—brown loam

Upper part of subsoil:
6 to 16 inches—light yellowish brown loam

Lower part of subsoil:
16 to 21 inches—brown gravelly coarse sandy loam

Substratum:
21 to 25 inches—brown gravelly loamy coarse sand

Bedrock:
25 to 35 inches—weathered granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Centralpeak Soil, Warm

Typical profile

Organic mat on the surface: 2 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loam

Upper part of subsoil:
4 to 12 inches—yellowish brown loam

Lower part of the subsoil:
12 to 20 inches—light yellowish brown coarse sandy loam

Substratum:
20 to 29 inches—light olive brown gravelly loamy coarse sand

Bedrock:
29 to 39 inches—weathered granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Ohscow soils
- Dinkelman soils
- Mineral soils
- Spokane soils
- Codylake soils
- Skanid soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of

slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration (Centralpeak): Douglas-fir—readily; ponderosa pine and western larch—periodically
Potential for natural regeneration (Centralpeak, warm): Douglas-fir, ponderosa pine, and lodgepole pine—periodically
Limitations for planting: Steepness of slope and Rock outcrop

85—Chumstick-Rock outcrop complex, 5 to 20 percent slopes

Composition

Chumstick soil and similar soils: 60 percent
Rock outcrop: 25 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges and shoulders of mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 3,500 to 5,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Chumstick—stones cover 3 to 15 percent

Chumstick Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—dark grayish brown very stony loam

Subsoil:
7 to 12 inches—brown very cobbly sandy loam

Bedrock:
12 to 16 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Mineral and Capoose soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Merkel soils
- Soils that have an extremely stony or extremely bouldery surface

Major Uses

Timber production, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsuitable because of surface stones and Rock outcrop; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

86—Chumstick-Rock outcrop complex, 20 to 65 percent slopes

Composition

Chumstick soil and similar soils: 50 percent
Rock outcrop: 35 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with volcanic ash and loess
Slope range: 20 to 65 percent
Elevation: 3,500 to 5,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F

Frost-free period: 90 to 120 days
Rock fragments on surface: Chumstick—stones and boulders cover 3 to 15 percent

Chumstick Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—dark grayish brown very stony loam

Subsoil:
7 to 12 inches—brown very cobbly sandy loam

Bedrock:
12 to 16 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Mineral and Capoose soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Merkel soils
- Soils that have an extremely stony or extremely bouldery surface

Major Uses

Timber production, wildlife habitat, watershed, recreation, and livestock grazing

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically

Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

87—Codylake loam, 5 to 20 percent slopes

Composition

Codylake soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Ridges and shoulders of mountains
Parent material: Volcanic ash over colluvium and residuum derived from granitic rock
Slope range: 5 to 20 percent
Elevation: 4,200 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 38 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—yellowish brown loam

Upper part of subsoil:
5 to 13 inches—yellowish brown loam

Lower part of subsoil:
13 to 24 inches—light yellowish brown gravelly fine sandy loam

Substratum:
24 to 43 inches—light yellowish brown gravelly sandy loam

Bedrock:
43 to 53 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Resner soils

- Moses soils
- Buhrig soils
- Mineral soils
- Manley soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, lodgepole pine, and subalpine fir—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

88—Codylake loam, 20 to 40 percent slopes

Composition

Codylake soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Ridges and backslopes of mountains
Parent material: Volcanic ash over colluvium and residuum derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 4,200 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—yellowish brown loam

Upper part of subsoil:
5 to 13 inches—yellowish brown loam

Lower part of subsoil:
13 to 24 inches—light yellowish brown gravelly fine sandy loam

Substratum:
24 to 43 inches—light yellowish brown gravelly sandy loam

Bedrock:
43 to 53 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Resner soils
- Moses soils
- Buhrig soils
- Mineral soils
- Manley soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, lodgepole pine, and subalpine fir—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

89—Codylake loam, 40 to 65 percent slopes

Composition

Codylake soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backslopes and shoulders of mountains
Parent material: Volcanic ash over colluvium and residuum derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 4,200 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—yellowish brown loam

Upper part of subsoil:
5 to 13 inches—yellowish brown loam

Lower part of subsoil:
13 to 24 inches—light yellowish brown gravelly fine sandy loam

Substratum:
24 to 43 inches—light yellowish brown gravelly sandy loam

Bedrock:
43 to 53 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Moses soils
- Buhrig soils
- Mineral and Centralpeak soils
- Manley soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, lodgepole pine, and subalpine fir—readily; western larch and lodgepole pine—periodically
Limitation for planting: Steepness of slope

90—Colockum loam, 8 to 15 percent slopes

Composition

Colockum soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Depressions areas on till plains and toeslopes of moraines
Parent material: Glacial till with a mantle of loess
Slope range: 8 to 15 percent
Elevation: 1,900 to 2,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 10 inches—dark grayish brown loam

Upper part of subsoil:
10 to 24 inches—yellowish brown clay loam

Middle part of subsoil:
24 to 38 inches—yellowish brown gravelly clay loam

Lower part of subsoil:
38 to 60 inches—light yellowish brown, calcareous gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium

Hazard of water erosion: Cropland—moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Emdent soils
- Achimin soils
- Timentwa and Conconully soils

Major Uses

Livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

91—Colockum stony loam, 3 to 25 percent slopes

Composition

Colockum soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and footslopes of moraines
Parent material: Glacial till with a mantle of loess
Slope range: 3 to 25 percent
Elevation: 1,900 to 2,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 11 inches—dark brown stony loam

Upper part of subsoil:
11 to 22 inches—yellowish brown silty clay loam

Middle part of subsoil:
22 to 36 inches—olive yellow loam

Lower part of subsoil:
36 to 46 inches—brownish yellow, calcareous silty clay loam
46 to 60 inches—yellow, calcareous gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow to rapid
Hazard of water erosion: Cropland—slight to severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Emdent soils
- Achimin soils
- Timentwa and Conconully soils
- Soils that do not have a layer of lime accumulation
- Badge soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and water erosion.

92—Colockum bouldery loam, 25 to 65 percent slopes

Composition

Colockum soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of moraines
Parent material: Glacial till with a mantle of loess
Slope range: 25 to 65 percent
Elevation: 1,900 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F

Frost-free period: 110 to 150 days
Rock fragments on surface: Boulders and stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 10 inches—dark grayish brown bouldery loam

Subsurface layer:
10 to 14 inches—very pale brown gravelly clay loam

Upper part of subsoil:
14 to 33 inches—yellowish brown cobbly clay loam

Lower part of subsoil:
33 to 60 inches—light yellowish brown, calcareous gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Achimin soils
- Timentwa and Conconully soils
- Badge soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

93—Conconully fine sandy loam, 8 to 15 percent slopes

Composition

Conconully soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Undulating ground moraines on foothills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 8 to 15 percent
Elevation: 1,600 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 15 inches—grayish brown fine sandy loam

Upper part of subsoil:
15 to 21 inches—pale brown fine sandy loam

Lower part of subsoil:
21 to 35 inches—yellowish brown gravelly fine sandy loam

Substratum:
35 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a very gravelly or very cobbly substratum
- Haley and Hobohill soils
- Ewall soils
- Soils that have a stony or bouldery surface
- Nespelem soils

Major Uses

Livestock grazing, irrigated hay and pasture, nonirrigated cropland, building site development, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too permeable for successful pond

installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by wind erosion, steepness of slope, and rooting depth.

94—Conconully fine sandy loam, 15 to 30 percent slopes

Composition

Conconully soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ground moraines on foothills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 15 to 30 percent
Elevation: 1,600 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 15 inches—grayish brown fine sandy loam

Upper part of subsoil:
15 to 21 inches—pale brown fine sandy loam

Lower part of subsoil:
21 to 35 inches—yellowish brown gravelly fine sandy loam

Substratum:
35 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

• Soils that have a very gravelly or very cobbly substratum
• Haley and Hobohill soils
• Ewall soils
• Soils that have a stony or bouldery surface

Major Uses

Livestock grazing, nonirrigated cropland, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

• This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
• This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

95—Conconully stony fine sandy loam, 3 to 25 percent slopes

Composition

Conconully soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ground moraines on foothills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 3 to 25 percent
Elevation: 1,600 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones and boulders cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 9 inches—brown stony fine sandy loam

Subsoil:
9 to 32 inches—yellowish brown gravelly fine sandy loam

Substratum:
32 to 60 inches—yellowish brown dense glacial till that crushes to gravelly fine sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow

Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight to severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Soils that have a very gravelly subsoil or substratum
- Haley and Hobohill soils
- Soils that have a very stony or very bouldery surface

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and rooting depth.

96—Conconully stony fine sandy loam, 25 to 65 percent slopes

Composition

Conconully soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Ground moraines on foothills with southerly aspects (fig. 5)
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 25 to 65 percent
Elevation: 1,600 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 9 inches—brown stony fine sandy loam

Subsoil:
9 to 32 inches—yellowish brown gravelly fine sandy loam

Substratum:
32 to 60 inches—yellowish brown dense glacial till that crushes to gravelly fine sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Soils that have a very gravelly subsoil or substratum
- Haley and Hobohill soils that have a sandy substratum
- Soils that have a very stony or very bouldery surface
- Swakane and Tyee soils that are 10 to 20 inches deep to bedrock
- Rock outcrop
- Rubble land

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

97—Conconully stony fine sandy loam, 25 to 65 percent north slopes

Composition

Conconully soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Figure 5.—Southerly exposure of Conconully stony fine sandy loam, 25 to 65 percent slopes. The ecological site (Dry Loamy, 9-15 PZ) is in good condition.

Setting

Position on landscape: Ground moraines on foothills with northerly aspects
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 25 to 65 percent
Elevation: 1,600 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 12 inches—grayish brown stony fine sandy loam

Subsoil:
12 to 21 inches—light yellowish brown gravelly fine sandy loam

Substratum:
21 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Soils that have a very gravelly subsoil or substratum
- Haley and Hobohill soils
- Soils that have a very stony or very bouldery surface
- Swakane and Tyee soils

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

98—Conconully bouldery fine sandy loam, 5 to 30 percent slopes

Composition

Conconully soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ground moraines on foothills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 1,600 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Boulders and stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 10 inches—grayish brown bouldery fine sandy loam

Subsoil:
10 to 25 inches—pale brown gravelly fine sandy loam

Substratum:
25 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Soils that have a very gravelly subsoil or substratum
- Haley and Hobohill soils
- Soils that have a very stony or very bouldery surface

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and rooting depth.

99—Conconully-Bakeoven complex, 3 to 25 percent slopes

Composition

Conconully soil and similar soils: 50 percent

Bakeoven soil and similar soils: 35 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Conconully—ground moraines on plateaus; Bakeoven—glacially scoured plateaus
Parent material: Conconully—glacial till mixed with a component of loess and volcanic ash; Bakeoven—residuum and colluvium derived from basalt mixed with loess
Slope range: 3 to 25 percent
Elevation: 2,000 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Conconully—stones cover 0.1 to 3.0 percent; Bakeoven—cobbles cover 35 to 50 percent

Typical Profile

Conconully

Surface layer:
0 to 9 inches—brown stony fine sandy loam

Subsoil:
9 to 32 inches—yellowish brown gravelly fine sandy loam

Substratum:
32 to 60 inches—yellowish brown dense glacial till that crushes to gravelly fine sandy loam

Bakeoven

Surface layer:
0 to 3 inches—brown very cobbly silt loam

Subsoil:
3 to 7 inches—brown very cobbly silt loam

Bedrock:
7 to 11 inches—basalt

Soil Properties and Qualities

Depth class: Conconully—moderately deep (20 to 40 inches to dense glacial till); Bakeoven—very shallow (4 to 10 inches to bedrock)
Drainage class: Well drained
Permeability: Conconully—moderately rapid over slow; Bakeoven—moderate
Available water capacity: Conconully—moderately high; Bakeoven—very low
Effective rooting depth: Conconully—20 to 40 inches; Bakeoven—4 to 10 inches
Runoff: Slow or medium
Hazard of water erosion on rangeland: Conconully—slight or moderate; Bakeoven—slight
Hazard of wind erosion (bare surface): Conconully—moderate; Bakeoven—slight

Contrasting Inclusions

- Anders soils
- Soils that are 40 to 60 inches deep to basalt
- Emdent soils
- Rock outcrop

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- The Bakeoven soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.
- The Conconully soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope, large stones, and rooting depth.

100—Conconully-Rock outcrop complex, 5 to 30 percent slopes

Composition

Conconully soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Glacially scoured ridges and shoulders of hills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 2,000 to 2,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Conconully—stones cover 3 to 15 percent

Conconully Soil

Typical profile

Surface layer:
0 to 7 inches—grayish brown very stony fine sandy loam

Subsoil:
7 to 21 inches—brown gravelly sandy loam

Substratum:
21 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium
Hazard of water erosion: Rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock and gneiss

Contrasting Inclusions

- Swakane soils
- Soils that are very gravelly and have granitic rock at a depth of 20 to 40 inches
- Donavan soils

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

101—Conconully-Rock outcrop complex, 30 to 65 percent slopes

Composition

Conconully soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Glacially scoured shoulders and backslopes of hills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 2,000 to 2,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Conconully—stones cover 3 to 15 percent

Conconully Soil

Typical profile

Surface layer:
0 to 7 inches—grayish brown very stony fine sandy loam

Subsoil:
7 to 21 inches—brown gravelly sandy loam

Substratum:
21 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock and gneiss

Contrasting Inclusions

- Swakane soils
- Soils that are very gravelly and have granitic rock at a depth of 20 to 40 inches
- Donavan soils

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range

seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
• The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

102—Conconully-Swakane-Rock outcrop complex, 3 to 30 percent slopes

Composition

Conconully soil and similar soils: 40 percent
Swakane soil and similar soils: 25 percent
Rock outcrop: 15 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Conconully—ground moraines on glacially scoured hills; Swakane—glacially scoured hills
Parent material: Conconully—glacial till mixed with a component of loess and volcanic ash; Swakane—residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: Conconully—3 to 25 percent; Swakane—3 to 30 percent
Elevation: 2,000 to 2,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Conconully—boulders and stones cover 0.1 to 3.0 percent; Swakane—stones cover 3 to 15 percent

Conconully Soil

Typical profile

Surface layer:
0 to 10 inches—grayish brown bouldery fine sandy loam

Subsoil:
10 to 25 inches—pale brown gravelly fine sandy loam

Substratum:
25 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Slight or moderate
Hazard of wind erosion (bare surface): Moderate

Swakane Soil

Typical profile

Upper part of surface layer:
0 to 7 inches—dark brown very stony loam

Lower part of surface layer:
7 to 11 inches—brown very gravelly loam

Subsoil:
11 to 14 inches—yellowish brown very cobbly loam

Bedrock:
14 to 18 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Effective rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Slight or moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock and gneiss

Contrasting Inclusions

• Soils that have bedrock at a depth of less than 10 inches
• Rubble land

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
• The Swakane soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.
• The Conconully soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

103—Couleedam-Rock outcrop complex, 30 to 70 percent slopes

Composition

Couleedam soil and similar soils: 55 percent
Rock outcrop: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of foothills
Parent material: Colluvium derived from granitic rock and gneiss mixed with loess
Slope range: 30 to 70 percent
Elevation: 1,000 to 2,200 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Couleedam—stones cover 3 to 15 percent

Couleedam Soil

Typical profile

Upper part of surface layer:
0 to 3 inches—brown very stony sandy loam

Lower part of surface layer:
3 to 8 inches—brown very cobbly sandy loam

Subsoil:
8 to 15 inches—pale brown very gravelly sandy loam

Bedrock:
15 to 19 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock and gneiss

Contrasting Inclusions

- Soils that are 4 to 10 inches deep to hard bedrock
- Roosevelt soils that are 20 to 40 inches deep to hard bedrock
- Malott soils that are deep and have fewer rock fragments
- Rubble land

Major Uses

Livestock grazing, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

104—Coxlake silt loam, 0 to 3 percent slopes

Composition

Coxlake soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Low stream terraces and flood plains
Parent material: Alluvium
Slope range: 0 to 3 percent
Elevation: 1,700 to 2,600 feet
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 140 days

Typical Profile

Upper part of surface layer:
0 to 6 inches—dark grayish brown silt loam

Lower part of surface layer:
6 to 29 inches—mottled, dark grayish brown silt loam

Upper part of substratum:
29 to 48 inches—light brownish gray silt loam and loam

Lower part of substratum:
48 to 60 inches—mottled, pale brown very gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Permeability: Moderate

Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—none or slight; forestland—none or slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in November through August (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Ralsen soils
- Bossburg and Medisaprists
- Narcisse and Fivelakes soils

Major Uses

Livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable during periods when the soil is dry; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen, thinleaf alder, and paper birch—readily; ponderosa pine and Douglas-fir—periodically

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wetness.

105—Cryofluvents, 0 to 8 percent slopes

Composition

Cryofluvents and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Narrow flood plains and low stream terraces along mountain streams
Parent material: Alluvium mixed with volcanic ash
Slope range: 0 to 8 percent
Elevation: 2,800 to 4,800 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 40 to 42 degrees F
Frost-free period: 80 to 100 days

Reference Profile

Organic mat on surface: 3 inches thick

Upper part of surface layer:
0 to 5 inches—brown loam

Lower part of surface layer:
5 to 12 inches—brown, stratified silt loam to sandy loam

Upper part of substratum:
12 to 21 inches—pale brown gravelly coarse sandy loam

Middle part of substratum:
21 to 30 inches—multicolored very gravelly coarse sand

Lower part of substratum:
30 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained and moderately well drained
Permeability: Moderate over moderately rapid and rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—slight
Water table: Present in March through June (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in March through June

Contrasting Inclusions

- Manley and Resner soils
- Andic Cryaquepts
- Soils that have a thick, dark-colored surface layer

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Engelmann spruce and subalpine fir—readily; Douglas-fir, western larch, and lodgepole pine—periodically
Limitations for planting: None

106—Cubcreek fine sandy loam, 0 to 3 percent slopes

Composition

Cubcreek soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Stream terraces and flood plains
Parent material: Recent alluvium
Slope range: 0 to 3 percent
Elevation: 1,500 to 2,100 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Upper part of surface layer:
0 to 10 inches—dark gray fine sandy loam

Lower part of surface layer:
10 to 19 inches—grayish brown and gray, stratified sandy loam to gravelly loamy sand

Substratum:
19 to 60 inches—mottled, light brownish gray and light gray, stratified loam to gravelly loamy fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate over moderately rapid and rapid
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—none to slight
Hazard of wind erosion (bare surface): Moderate
Water table: Present in January through June (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Boesel soils
- Aquic Xerofluvents and Ret soils
- Bong soils
- Soils that are very gravelly sand below a depth of about 12 inches

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

107—Cumulic Haploxerolls, 3 to 10 percent slopes

Composition

Cumulic Haploxerolls and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans
Parent material: Alluvium
Slope range: 3 to 10 percent
Elevation: 1,700 to 2,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Reference Profile

Surface layer:
0 to 30 inches—dark grayish brown gravelly loam

Substratum:
30 to 60 inches—dark brown gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate over moderately rapid and rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through May (see "Water Features" table)

Contrasting Inclusions

- Tyee soils
- Ginnis and Morical soils
- Soils that are somewhat poorly drained
- Soils that have a cobbly surface layer

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This unit has a high water table at certain times of the year that limits use of the unit.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope.

108—Dart loamy sand, warm, 0 to 15 percent slopes

Composition

Dart soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Sandy glacial outwash
Slope range: 0 to 15 percent
Elevation: 1,400 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 3 inches—grayish brown loamy sand

Subsoil:
3 to 14 inches—pale brown loamy sand

Upper part of substratum:
14 to 32 inches—pale brown loamy sand

Lower part of substratum:
32 to 60 inches—pale brown sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Very slow or slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Very severe

Contrasting Inclusions

- Spens and Springdale soils
- Winthrop and Garrison soils
- Phoebe soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

109—Dart loamy coarse sand, warm, 30 to 65 percent slopes

Composition

Dart soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments and backslopes of hills
Parent material: Sandy glacial outwash
Slope range: 30 to 65 percent
Elevation: 1,400 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 8 inches—grayish brown loamy coarse sand

Upper part of substratum:
8 to 16 inches—light gray loamy sand

Lower part of substratum:
16 to 60 inches—light gray sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Spens and Springdale soils
- Bong soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Steepness of slope

110—Dart, warm-Springdale complex, 5 to 30 percent slopes

Composition

Dart soil and similar soils: 50 percent
Springdale soil and similar soils: 35 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Dissected outwash terraces and terrace escarpments
Parent material: Dart—sandy glacial outwash; Springdale soil—glacial outwash mixed with a component of loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 1,400 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Dart

Surface layer:
0 to 3 inches—grayish brown loamy sand

Subsoil:
3 to 14 inches—pale brown loamy sand

Upper part of substratum:
14 to 32 inches—pale brown loamy sand

Lower part of substratum:
32 to 60 inches—pale brown sand

Springdale

Organic mat on the surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly sandy loam

Subsoil:
4 to 11 inches—pale brown gravelly sandy loam

Upper part of substratum:
11 to 17 inches—very pale brown gravelly sand

Lower part of substratum:
17 to 60 inches—multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Dart—rapid; Springdale—moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Dart—very severe; Springdale—moderate

Contrasting Inclusions

- Phoebe soils
- Bong soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Dart—none; Springdale—rock fragments in the soil

Irrigated Cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope and droughtiness and by fast infiltration of the Dart soil.

111—Dart, warm-Springdale complex, 30 to 65 percent slopes

Composition

Dart soil and similar soils: 45 percent
Springdale soil and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Dart—sandy glacial outwash; Springdale—glacial outwash mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,400 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Dart

Surface layer:
0 to 5 inches—brown loamy sand

Upper part of substratum:
5 to 38 inches—light yellowish brown sand

Lower part of substratum:
38 to 60 inches—multicolored coarse sand

Springdale

Organic mat on the surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly sandy loam

Subsoil:
4 to 11 inches—pale brown gravelly sandy loam

Upper part of substratum:
11 to 17 inches—very pale brown gravelly sand

Lower part of substratum:
17 to 60 inches—multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Dart—rapid; Springdale—moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe
Hazard of wind erosion (bare surface): Dart—very severe; Springdale—severe

Contrasting Inclusions

- Phoebe soils
- Bong soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Dart—steepness of slope; Springdale—rock fragments in the soil and steepness of slope

112—Dehart gravelly loam, 8 to 30 percent slopes

Composition

Dehart soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toe slopes, backslopes, and shoulders of hills
Parent material: Glacial till and colluvium derived from metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 8 to 30 percent
Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—brown gravelly loam

Subsoil:
7 to 32 inches—pale brown very gravelly loam

Substratum:
32 to 60 inches—very pale brown very gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Springdale soils
- Raisio soils
- Hudnut soils
- Donavan soils
- Rock outcrop

Use and Management

Timber production, livestock grazing, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

113—Dehart gravelly loam, 30 to 65 percent slopes

Composition

Dehart soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills
Parent material: Glacial till and colluvium derived from metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—brown gravelly loam

Subsoil:
7 to 32 inches—pale brown very gravelly loam

Substratum:
32 to 60 inches—very pale brown very gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Springdale soils
- Raisio soils
- Hudnut soils
- Donavan soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

114—Dehart-Phoebe, dry complex, 30 to 65 percent slopes

Composition

Dehart soil and similar soils: 60 percent
Phoebe soil, dry, and similar soils: 25 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Dehart—backslopes of hills; Phoebe—terrace escarpments
Parent material: Dehart—colluvium derived from glacial till and metamorphic rock mixed with a component of loess and volcanic ash; Phoebe—glacial till mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Dehart

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—brown gravelly loam

Subsoil:
7 to 32 inches—pale brown very gravelly loam

Substratum:
32 to 60 inches—very pale brown very gravelly loam

Phoebe

Organic mat on the surface: 1 inch thick

Surface layer:
0 to 16 inches—grayish brown fine sandy loam

Upper part of subsoil:
16 to 30 inches—yellowish brown gravelly fine sandy loam

Lower part of the subsoil:
30 to 39 inches—light olive brown gravelly sandy loam

Substratum:
39 to 60 inches—light olive brown loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Dehart—moderate; Phoebe—moderately rapid over very rapid
Available water capacity: Dehart—moderate; Phoebe—moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid

Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Garrison soils
- Soils that have more clay in the subsoil
- Dart soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Steepness of slope

115—Dehart-Rock outcrop complex, 8 to 30 percent slopes

Composition

Dehart soil and similar soils: 55 percent
Rock outcrop: 25 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Toeslopes and backslopes of hills
Parent material: Glacial till and colluvium derived from metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 8 to 30 percent
Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Dehart Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—brown and grayish brown gravelly loam

Subsoil:
8 to 30 inches—pale brown very gravelly loam

Substratum:
30 to 60 inches—very pale brown very gravelly loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Phyllite, schist, slate, graywacke, and quartzite

Contrasting Inclusions

- Springdale soils
- Raisio soils
- Rufus soils
- Hudnut soils
- Donavan soils
- Rubble land

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

116—Dehart-Rock outcrop complex, 30 to 65 percent slopes

Composition

Dehart soil and similar soils: 50 percent

Rock outcrop: 30 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of hills
Parent material: Glacial till and colluvium derived from metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Dehart Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—brown and grayish brown gravelly loam

Subsoil:
8 to 30 inches—pale brown very gravelly loam

Substratum:
30 to 60 inches—very pale brown very gravelly loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Rock Outcrop

Kind of rock: Phyllite, schist, graywacke, slate, and quartzite

Contrasting Inclusions

- Springdale soils
- Raisio soils
- Rufus soils
- Hudnut soils
- Donavan soils
- Rubble land

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

117—Dinkelman loam, 5 to 20 percent slopes

Composition

Dinkelman soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 20 percent
Elevation: 2,000 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 13 inches—grayish brown and brown loam

Upper part of subsoil:
13 to 28 inches—light yellowish brown gravelly loam

Lower part of subsoil:
28 to 39 inches—very pale brown gravelly sandy loam

Substratum:
39 to 43 inches—very pale brown gravelly coarse sandy loam

Bedrock:
43 to 53 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Bearspring soils
- Canteen soils
- Brushcreek soils
- Mineral soils
- Centralpeak soils
- Soils that have a very stony surface
- Spokane soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

118—Dinkelman loam, 20 to 40 percent slopes

Composition

Dinkelman soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 2,000 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 13 inches—grayish brown and brown loam

Upper part of subsoil:
13 to 28 inches—light yellowish brown gravelly loam

Lower part of subsoil:
28 to 39 inches—very pale brown gravelly sandy loam

Substratum:
39 to 43 inches—very pale brown gravelly coarse sandy loam

Bedrock:
43 to 53 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Bearspring soils
- Canteen soils
- Brushcreek soils
- Mineral soils
- Centralpeak soils
- Soils that have a very stony surface
- Spokane soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

119—Dinkelman gravelly loam, 40 to 65 percent slopes

Composition

Dinkelman soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 40 to 65 percent
Elevation: 2,000 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 10 inches—grayish brown gravelly loam

Lower part of surface layer:
10 to 17 inches—brown gravelly sandy loam

Subsoil:
17 to 43 inches—light yellowish brown gravelly sandy loam

Bedrock:
43 to 53 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Bearspring soils
- Canteen soils
- Brushcreek soils
- Mineral soils
- Centralpeak soils
- Soils that have a very stony surface
- Spokane soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Steepness of slope

120—Disautel very fine sandy loam, 0 to 8 percent slopes

Composition

Disautel soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ground moraines on foothills
Parent material: Loess over glacial till
Slope range: 0 to 8 percent
Elevation: 1,600 to 2,400 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 15 inches—dark grayish brown and brown very fine sandy loam

Upper part of subsoil:
15 to 32 inches—pale brown very fine sandy loam

Lower part of subsoil:
32 to 60 inches—light gray, calcareous dense glacial till that crushes to very gravelly fine sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony or very stony surface
- Nespelem soils
- Hobohill and Haley soils
- Owhi soils
- Poween soils

Major Uses

Livestock grazing, nonirrigated cropland, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- The depth to dense glacial till restricts pond development.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wind erosion, and rooting depth.

121—Disautel very fine sandy loam, 8 to 15 percent slopes

Composition

Disautel soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ground moraines on foothills
Parent material: Loess over glacial till
Slope range: 8 to 15 percent
Elevation: 1,600 to 2,400 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 15 inches—dark grayish brown and brown very fine sandy loam

Upper part of subsoil:
15 to 32 inches—pale brown very fine sandy loam

Lower part of subsoil:
32 to 60 inches—light gray, calcareous dense glacial till that crushes to very gravelly fine sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Medium
Hazard of water erosion: Cropland—moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony or very stony surface
- Nespelem soils
- Hobohill and Haley soils
- Owhi soils
- Poween soils

Major Uses

Livestock grazing, nonirrigated cropland, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wind erosion, and rooting depth.

122—Disautel-Nespelem complex, 3 to 20 percent slopes

Composition

Disautel soil and similar soils: 60 percent
Nespelem soil and similar soils: 30 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Disautel—ground moraines on foothills; Nespelem—terraces adjacent to foothills
Parent material: Disautel—loess over glacial till; Nespelem—loess over glacial lake sediment
Slope range: 3 to 20 percent
Elevation: 2,000 to 2,300 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Disautel

Surface layer:
0 to 15 inches—dark grayish brown and brown very fine sandy loam

Upper part of subsoil:
15 to 32 inches—pale brown very fine sandy loam

Lower part of subsoil:
32 to 60 inches—light gray, calcareous dense glacial till that crushes to very gravelly fine sandy loam

Nespelem

Surface layer:
0 to 12 inches—grayish brown silt loam

Upper part of subsoil:
12 to 22 inches—pale brown silt loam

Middle part of subsoil:
22 to 24 inches—light brownish gray hardpan

Lower part of subsoil:
24 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Disautel—moderately deep (20 to 40 inches to dense glacial till); Nespelem—moderately deep (20 to 40 inches to a hardpan)
Drainage class: Well drained
Permeability: Disautel—moderate over slow; Nespelem—moderate
Available water capacity: Disautel—high; Nespelem—moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Disautel—severe; Nespelem—slight

Contrasting Inclusions

- Ewall soils
- Poween and Narcisse soils

Major Uses

Livestock grazing, nonirrigated cropland, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- The depth to the hardpan in the Nespelem soil and the depth to dense glacial till in the Disautel soil restrict pond development. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope, wind erosion, and rooting depth.

123—Disautel-Rock outcrop complex, 3 to 30 percent slopes

Composition

Disautel soil and similar soils: 50 percent
Rock outcrop: 30 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Ground moraines on foothills
Parent material: Loess over glacial till
Slope range: 3 to 30 percent
Elevation: 1,600 to 2,400 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Disautel Soil

Typical profile

Surface layer:
0 to 15 inches—dark grayish brown and brown very fine sandy loam

Upper part of subsoil:
15 to 32 inches—pale brown very fine sandy loam

Lower part of subsoil:
32 to 60 inches—light gray, calcareous dense glacial till that crushes to very gravelly fine sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High

Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Rock Outcrop

Kind of rock: Granite

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Soils that have bedrock at a depth of 10 to 40 inches
- Nespelem soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

124—Donavan sandy loam, warm, 5 to 15 percent slopes

Composition

Donavan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and summits of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 15 percent
Elevation: 2,200 to 3,600 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 9 inches—grayish brown sandy loam

Lower part of surface layer:
9 to 15 inches—pale brown sandy loam

Subsoil:
15 to 33 inches—light gray cobbly sandy loam

Substratum:
33 to 60 inches—white dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Nevine and Torboy soils
- Soils that are 40 to 60 inches deep to hard granitic rock
- Soils that are very gravelly
- Soils that have sand at a depth of about 30 inches
- Soils that have a stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wind erosion, and rooting depth.

125—Donavan sandy loam, warm, 15 to 30 percent slopes

Composition

Donavan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 15 to 30 percent
Elevation: 2,200 to 3,600 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 9 inches—grayish brown sandy loam

Lower part of surface layer:
9 to 15 inches—pale brown sandy loam

Subsoil:
15 to 33 inches—light gray cobbly sandy loam

Substratum:
33 to 60 inches—white dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Aits and Republic soils
- Vanbrunt soils
- Soils that are very gravelly
- Soils that have sand at a depth of about 30 inches
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—moderate
Limitations for planting: None

126—Donavan bouldery sandy loam, warm, 5 to 20 percent slopes

Composition

Donavan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and summits of hills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 20 percent
Elevation: 1,500 to 3,600 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Boulders and stones cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 8 inches—grayish brown bouldery sandy loam

Lower part of surface layer:
8 to 15 inches—light brownish gray sandy loam

Subsoil:
15 to 36 inches—light gray cobbly sandy loam

Substratum:
36 to 60 inches—very pale brown dense glacial till that crushes to cobbly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high

Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Vanbrunt soils
- Soils that are very gravelly
- Republic soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and large stones.

127—Donavan bouldery sandy loam, warm, 20 to 40 percent slopes

Composition

Donavan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 1,500 to 3,600 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Boulders and stones cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 8 inches—grayish brown bouldery sandy loam

Lower part of surface layer:
8 to 15 inches—light brownish gray sandy loam

Subsoil:
15 to 36 inches—light gray cobbly sandy loam

Substratum:
36 to 60 inches—very pale brown dense glacial till that crushes to cobbly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Vanbrunt soils
- Stapaloop soils
- Bernhill soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

128—Donavan loam, dry, 5 to 15 percent slopes

Composition

Donavan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes of foothills and mountains, and till plains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 15 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 11 inches—dark grayish brown and brown loam

Subsoil:
11 to 21 inches—pale brown gravelly loam

Substratum:
21 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Goldlake soils
- Hudnut soils
- Northstar and Vanbrunt soils
- Apex and Republic soils

Major Uses

Timber production, livestock grazing, nonirrigated hay (fig. 6), building site development, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

129—Donavan loam, dry, 15 to 30 percent slopes

Composition

Donavan soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Toeslopes and footslopes of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 15 to 30 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 11 inches—dark grayish brown and brown loam

Subsoil:
11 to 21 inches—pale brown gravelly loam

Substratum:
21 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none

Figure 6.—Area of Donavan loam, dry, 5 to 15 percent slopes, used for hay production.

Hazard of water erosion: Cropland—moderate or severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Louiecreek and Whitestone soils
- Hudnut soils
- Northstar and Vanbrunt soils
- Apex and Republic soils

Major Uses

Timber production, livestock grazing, wildlife habitat, recreation, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

130—Donavan loam, dry, 30 to 65 percent slopes

Composition

Donavan soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backslopes of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 30 to 65 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 11 inches—dark grayish brown loam

Subsoil:
11 to 21 inches—pale brown gravelly loam

Substratum:
21 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Louiecreek and Whitestone soils
- Northstar and Vanbrunt soils
- Scoap soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Steepness of slope

131—Donavan bouldery loam, dry, 5 to 20 percent slopes

Composition

Donavan soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Toeslopes and summits of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 20 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Boulders and stones cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown bouldery loam

Lower part of surface layer:
5 to 10 inches—brown gravelly sandy loam

Subsoil:
10 to 21 inches—light yellowish brown gravelly sandy loam

Substratum:
21 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)

Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Republic soils
- Soils that have a very gravelly or very stony subsoil and substratum
- Northstar and Vanbrunt soils
- Rock outcrop

Major Uses

Current uses: Timber production, livestock grazing, wildlife habitat, recreation, and watershed
Potential use: Building site development

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and large stones.

132—Donavan bouldery loam, dry, 20 to 40 percent slopes

Composition

Donavan soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Footslopes of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Boulders and stones cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown bouldery loam

Lower part of surface layer:
5 to 10 inches—brown gravelly sandy loam

Subsoil:
10 to 21 inches—light yellowish brown gravelly sandy loam

Substratum:
21 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Soils that have a very gravelly or very stony substratum
- Vanbrunt soils
- Republic soils
- Swakane soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

133—Donavan, dry-Goldlake complex, 0 to 15 percent slopes

Composition

Donavan soil and similar soils: 55 percent
Goldlake soil and similar soils: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Donavan—convex areas of ground moraines on foothills; Goldlake—concave areas of ground moraines on hills
Parent material: Donavan—glacial till mixed with a component of loess and volcanic ash in the upper part; Goldlake—glacial till and slope alluvium mixed with a component of loess and volcanic ash
Slope range: Donavan—5 to 15 percent; Goldlake—0 to 8 percent
Elevation: 2,000 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Donavan

Organic mat on surface: 2 inches thick

Surface layer:
0 to 11 inches—dark grayish brown and brown loam

Subsoil:
11 to 21 inches—pale brown gravelly loam

Substratum:
21 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Goldlake

Organic mat on surface: 2 inches thick

Surface layer:
0 to 22 inches—dark grayish brown and grayish brown silt loam

Upper part of subsoil:
22 to 29 inches—pale brown gravelly loam

Lower part of subsoil:
29 to 40 inches—very pale brown gravelly sandy loam

Substratum:
40 to 60 inches—very pale brown dense glacial till that crushes to gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Donavan—moderately deep (20 to 40 inches to dense glacial till); Goldlake—deep (40 to 60 inches to dense glacial till)
Drainage class: Donavan—well drained; Goldlake—moderately well drained
Permeability: Donavan—moderately rapid over slow; Goldlake—moderate over slow
Available water capacity: Donavan—moderately high; Goldlake—high
Effective rooting depth: Donavan—20 to 40 inches; Goldlake—40 to 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion (Donavan): Cropland—slight or moderate; forestland—slight or moderate
Hazard of water erosion (Goldlake): Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Goldlake—present in March through May (see “Water Features” table)

Contrasting Inclusions

- Soils that have a very gravelly subsoil and substratum
- Northstar soils
- Lostcreek soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically

Irrigated Cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope and rooting depth.

134—Donavan, dry-Northstar complex, 5 to 30 percent slopes

Composition

Donavan soil and similar soils: 50 percent
Northstar soil and similar soils: 30 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Donavan—toeslopes and footslopes of foothills and mountains; Northstar—summits and shoulders of hills and mountains
Parent material: Donavan—glacial till mixed with a component of loess and volcanic ash in the upper part; Northstar—residuum and colluvium derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 2,000 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Donavan

Organic mat on surface: 2 inches thick

Surface layer:
0 to 11 inches—dark grayish brown and brown loam

Subsoil:
11 to 21 inches—pale brown gravelly loam

Substratum:
21 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Northstar

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 2 inches—grayish brown gravelly loam

Lower part of surface layer:
2 to 11 inches—grayish brown very gravelly loam

Subsoil:
11 to 18 inches—pale brown very gravelly loam

Substratum:
18 to 27 inches—pale brown extremely cobbly loam

Bedrock:
27 to 31 inches—rhyodacite

Soil Properties and Qualities

Depth class: Donavan—moderately deep (20 to 40 inches to dense glacial till); Northstar—moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Donavan—moderately rapid over slow; Northstar—moderate
Available water capacity: Donavan—moderately high; Northstar—low
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion: Slight

Contrasting Inclusions

- Johntom soils
- Republic soils
- Louiecreek soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration (Donavan): Ponderosa pine and Douglas-fir—periodically
Potential for natural regeneration (Northstar): Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope and rooting depth and by droughtiness of the Northstar soil.

135—Donavan, warm-Rock outcrop complex, 5 to 20 percent slopes

Composition

Donavan soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and shoulders of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 20 percent
Elevation: 1,800 to 3,600 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Donavan—boulders and stones cover 0.1 to 3.0 percent

Donavan Soil

Typical profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 8 inches—grayish brown bouldery sandy loam

Lower part of surface layer:
8 to 15 inches—light brownish gray sandy loam

Subsoil:
15 to 36 inches—light gray cobbly sandy loam

Substratum:
36 to 60 inches—very pale brown dense glacial till that crushes to cobbly sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Apex and Republic soils
- Vanbrunt soils
- Soils that are very gravelly
- Soils that have sand at a depth of about 30 inches

Major Uses

Current uses: Timber production, livestock grazing, watershed, wildlife habitat, and recreation
Potential use: Building site development

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock outcrop

136—Donavan, dry-Rock outcrop, 5 to 20 percent slopes

Composition

Donavan soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Summits and shoulders of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 20 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Donavan—boulders and stones cover 0.1 to 3.0 percent

Donavan Soil

Typical profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown bouldery loam

Lower part of surface layer:
5 to 10 inches—brown gravelly sandy loam

Subsoil:
10 to 21 inches—brownish yellow gravelly sandy loam

Substratum:
21 to 60 inches—brownish yellow and pale yellow dense glacial till that crushes to gravelly sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Rock Outcrop

Kind of rock: Granitic rock, rhyodacite, and metamorphic rock

Contrasting Inclusions

- Republic soils
- Soils that have a very gravelly or very stony subsoil and substratum
- Northstar and Vanbrunt soils
- Soils that have a sandy loam surface layer

Major Uses

Current uses: Timber production, livestock grazing, wildlife habitat, and watershed
Potential use: Building site development

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Rock outcrop

137—Donavan, dry-Rock outcrop complex, 20 to 40 percent slopes

Composition

Donavan soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders and backslopes of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Donavan—boulders and stones cover 0.1 to 3.0 percent

Donavan Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 10 inches—dark grayish brown bouldery loam

Subsoil:
10 to 21 inches—brownish yellow gravelly sandy loam

Substratum:
21 to 60 inches—brownish yellow and pale yellow dense glacial till that crushes to gravelly sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Granitic rock, rhyodacite, and metamorphic rock

Contrasting Inclusions

- Louiecreek and Scoap soils
- Vanbrunt and Northstar soils
- Swakane and Johntom soils
- Republic soils
- Lostcreek soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, recreation, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Rock outcrop

138—Donavan, warm-Rock outcrop complex, 20 to 40 percent slopes

Composition

Donavan soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of foothills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 1,800 to 3,600 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days
Rock fragments on surface: Donavan—boulders and stones cover 0.1 to 3.0 percent

Donavan Soil

Typical profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 8 inches—grayish brown bouldery sandy loam

Lower part of surface layer:
8 to 15 inches—light brownish gray sandy loam

Subsoil:
15 to 36 inches—light gray cobbly sandy loam

Substratum:
36 to 60 inches—very pale brown dense glacial till that crushes to cobbly sandy loam

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Vanbrunt soils
- Republic and Stapaloop soils
- Soils that have a very gravelly subsoil or substratum

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock outcrop

139—Duleylake loam, 0 to 8 percent slopes

Composition

Duleylake soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Basins on glacial till plains
Parent material: Alluvium mixed with loess
Slope range: 0 to 8 percent
Elevation: 2,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 17 inches—dark grayish brown and brown loam

Upper part of subsoil:
17 to 23 inches—yellowish brown loam
23 to 31 inches—pale brown sandy loam

Middle part of subsoil:
31 to 37 inches—light brownish yellow, calcareous clay loam

Lower part of subsoil:
37 to 60 inches—very pale brown, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through June (see "Water Features" table)

Contrasting Inclusions

- Soils that are somewhat poorly drained and poorly drained
- Timentwa soils
- Picard soils
- Emdent soils

Major Uses

Nonirrigated cropland, nonirrigated hay and pasture, livestock grazing, wildlife habitat, recreation, and watershed

Use and Management

Livestock grazing

- This soil has a high water table at certain times of the year that limits use of the soil.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wetness.

140—Elbowlake silt loam, 5 to 20 percent slopes

Composition

Elbowlake soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Toeslopes and footslopes of hills and mountains
Parent material: Volcanic ash over glacial till derived dominantly from metasedimentary rock
Slope range: 5 to 20 percent
Elevation: 2,100 to 4,100 feet
Average annual precipitation: 18 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 15 inches—light yellowish brown silt loam

Lower part of subsoil:
15 to 20 inches—pale brown very gravelly loam

Substratum:
20 to 60 inches—light brownish gray dense glacial till that crushes to very channery sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Inkler soils
- Hartill soils
- Kiehl soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir,

grand fir, and western larch—readily; lodgepole pine and western redcedar—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by rooting depth, steepness of slope, and water erosion.

141—Elbowlake silt loam, 20 to 40 percent slopes

Composition

Elbowlake soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Mantle of volcanic ash 14 to 20 inches thick over glacial till derived dominantly from metasedimentary rock
Slope range: 20 to 40 percent
Elevation: 2,100 to 4,100 feet
Average annual precipitation: 18 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 15 inches—light yellowish brown silt loam

Lower part of subsoil:
15 to 20 inches—pale brown very gravelly loam

Substratum:
20 to 60 inches—light brownish gray dense glacial till that crushes to very channery sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Inkler soils
• Hartill soils
• Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, grand fir, and western larch—readily; lodgepole pine and western redcedar—periodically
Limitations for planting: None

142—Elbowlake silt loam, 40 to 65 percent slopes

Composition

Elbowlake soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Volcanic ash and loess over glacial till derived dominantly from metasedimentary rock
Slope range: 40 to 65 percent
Elevation: 2,100 to 4,100 feet
Average annual precipitation: 18 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 15 inches—light yellowish brown silt loam

Lower part of subsoil:
15 to 20 inches—pale brown very gravelly loam

Substratum:
20 to 60 inches—light brownish gray dense glacial till that crushes to very channery sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Inkler soils
- Hartill soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, grand fir, and western larch—readily; lodgepole pine and western redcedar—periodically
Limitation for planting: Steepness of slope

143—Elbowlake silt loam, warm, 5 to 20 percent slopes

Composition

Elbowlake soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and footslopes of hills and mountains
Parent material: Volcanic ash and loess over glacial till derived dominantly from metasedimentary rock
Slope range: 5 to 20 percent
Elevation: 2,100 to 4,100 feet
Average annual precipitation: 18 to 24 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—dark grayish brown silt loam

Subsoil:
5 to 20 inches—yellowish brown silt loam

Substratum:
20 to 60 inches—light yellowish brown dense glacial till that crushes to very gravelly loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Kiehl soils
- Apex soils
- Inkler soils
- Republic soils
- Hartill and Oxerine soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by rooting depth, steepness of slope, and water erosion.

144—Elbowlake silt loam, warm, 20 to 40 percent slopes

Composition

Elbowlake soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Volcanic ash over glacial till derived dominantly from metasedimentary rock
Slope range: 20 to 40 percent
Elevation: 2,100 to 4,100 feet
Average annual precipitation: 18 to 24 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 5 inches—dark grayish brown silt loam

Subsoil:
5 to 20 inches—yellowish brown silt loam

Substratum:
20 to 60 inches—light yellowish brown dense glacial till that crushes to very gravelly loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Inkler soils
• Republic soils
• Apex soils
• Hartill and Oxerine soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

145—Elbowlake silt loam, warm, 40 to 65 percent slopes

Composition

Elbowlake soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Volcanic ash mantle over glacial till derived dominantly from metasedimentary rock
Slope range: 40 to 65 percent
Elevation: 2,100 to 4,100 feet
Average annual precipitation: 18 to 24 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—dark grayish brown silt loam

Subsoil:
5 to 20 inches—yellowish brown silt loam

Substratum:
20 to 60 inches—light yellowish brown dense glacial till that crushes to very gravelly loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches

Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Inkler soils
- Oxerine and Hartill soils
- Apex soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitation for planting: Steepness of slope

146—Ellisforde silt loam, 0 to 5 percent slopes

Composition

Ellisforde soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Loess over glacial lake sediment
Slope range: 0 to 5 percent
Elevation: 750 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown silt loam

Subsoil:
12 to 18 inches—light brownish gray silt loam

Upper part of substratum:
18 to 30 inches—pale brown silt loam

Lower part of substratum:
30 to 60 inches—very pale brown and pale brown, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Slight
Frequency of flooding: Rare near mouth of Okanogan River; none in other areas

Contrasting Inclusions

- Monse soils
- Aeneas soils
- Pogue soils
- Cashmere and Cashmont soils
- Quincy soils

Major Uses

Pasture, livestock grazing, watershed, wildlife habitat, building site development, and recreation

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by water erosion.

147—Ellisforde silt loam, 5 to 10 percent slopes

Composition

Ellisforde soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces
Parent material: Loess over glacial lake sediment
Slope range: 5 to 10 percent
Elevation: 750 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown silt loam

Subsoil:
12 to 18 inches—light brownish gray silt loam

Upper part of substratum:
18 to 30 inches—pale brown silt loam

Lower part of substratum:
30 to 60 inches—very pale brown and pale brown, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Cropland—moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Monse soils
- Aeneas soils
- Pogue soils
- Cashmere and Cashmont soils
- Quincy soils

Major Uses

Nonirrigated and irrigated cropland, irrigated orchards, irrigated hay and pasture, livestock grazing, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

148—Ellisforde silt loam, 10 to 25 percent slopes

Composition

Ellisforde soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Loess over glacial lake sediment
Slope range: 10 to 25 percent
Elevation: 750 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown silt loam

Subsoil:
12 to 18 inches—light brownish gray silt loam

Upper part of substratum:
18 to 30 inches—pale brown silt loam

Lower part of substratum:
30 to 60 inches—very pale brown and pale brown, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Aeneas soils
- Pogue soils
- Cashmere and Cashmont soils
- Quincy soils

Major Uses

Livestock grazing, nonirrigated cropland, irrigated orchards, irrigated hay and pasture, watershed, recreation, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

149—Elvedere silt loam, 15 to 30 percent slopes

Composition

Elvedere soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Undulating terraces and terrace escarpments
Parent material: Glacial lake sediment
Slope range: 15 to 30 percent
Elevation: 1,100 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Subsurface layer:
0 to 6 inches—light gray silt loam

Upper part of subsoil:
6 to 10 inches—pale brown and light gray silty clay loam

Lower part of subsoil:
10 to 60 inches—very pale brown, light gray, and white, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Slow
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Cropland—severe or very severe; rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Ellisforde soils
- Cashmere soils
- Winchester and Quincy soils
- Soils that have a stony or bouldery surface
- Leahy soils
- Soils that have been eroded, exposing unweathered lake sediment

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is clayey, which restricts pipeline installation.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and slow permeability.

150—Elvedere stony silt loam, 3 to 25 percent slopes

Composition

Elvedere soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Undulating terraces and terrace escarpments
Parent material: Glacial lake sediment
Slope range: 3 to 25 percent
Elevation: 1,100 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones and boulders cover 0.1 to 3.0 percent

Typical Profile

Subsurface layer:
0 to 6 inches—light gray stony silt loam

Upper part of subsoil:
6 to 10 inches—pale brown and light gray silty clay loam

Lower part of subsoil:
10 to 60 inches—light gray and white, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Slow
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or

severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Cashmere soils
- Quincy and Winchester soils
- Cashmont and Malott soils
- Leahy soils
- Soils that have been eroded, exposing unweathered lake sediment

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is clayey, which restricts pipeline installation.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and slow permeability.

151—Elvedere stony silt loam, 25 to 45 percent slopes

Composition

Elvedere soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial lake sediment
Slope range: 25 to 45 percent
Elevation: 1,100 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones and boulders cover 0.1 to 3.0 percent

Typical Profile

Subsurface layer:
0 to 6 inches—light gray stony silt loam

Upper part of subsoil:
6 to 10 inches—pale brown and light gray silty clay loam

Lower part of subsoil:
10 to 60 inches—light gray and white, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Slow
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Rapid
Hazard of water erosion: Rangeland—severe
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Quincy and Winchester soils
- Cashmont and Malott soils
- Soils that have been eroded, exposing unweathered lake sediment
- Soils that have a very stony surface

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, or brush management using ground equipment.
- The soil in this unit is clayey, which restricts pipeline installation.

152—Elvedere-Leahy silt loams complex, 0 to 15 percent slopes

Composition

Elvedere soil and similar soils: 60 percent
Leahy soil and similar soils: 30 percent (fig. 7)
Contrasting inclusions: 10 percent

Setting

Position on landscape: Undulating terraces
Parent material: Glacial lake sediment
Slope range: 0 to 15 percent
Elevation: 1,100 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Elvedere

Subsurface layer:
0 to 6 inches—light gray silt loam

Figure 7.—Alkali Bottom 9-15 PZ ecological site on the Leahy soil in an area of Elvedere-Leahy silt loams complex, 0 to 15 percent slopes. The dominant vegetation is basin wildrye and black greasewood.

Upper part of subsoil:
6 to 10 inches—pale brown and light gray silty clay loam

Lower part of subsoil:
10 to 60 inches—very pale brown, light gray, and white, calcareous silty clay loam

Leahy

Subsurface layer:
0 to 3 inches—light gray, calcareous silt loam

Upper part of subsoil:
3 to 10 inches—brown and light gray, calcareous silty clay

Lower part of subsoil, and substratum:
10 to 60 inches—light gray and very pale brown, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Elvedere—well drained; Leahy—moderately well drained
Permeability: Elvedere—slow; Leahy—very slow
Available water capacity: Elvedere—high; Leahy—moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or

moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Elvedere—slight; Leahy—moderate
Water table: Leahy—present in February through April (see “Water Features” table)
Salinity: Elvedere—nonsaline in the upper 10 inches and very slightly saline between depths of 10 and 60 inches; Leahy—slightly saline in the upper 3 inches and moderately saline to strongly saline between depths of 3 and 60 inches

Contrasting Inclusions

- Ellisforde soils
- Cashmere soils
- Quincy and Winchester soils
- Soils that have a stony or bouldery surface
- Soils that have been eroded, exposing unweathered lake sediment

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- The soils in this unit are clayey, which restricts pipeline installation.
- The Leahy soil has a high water table at certain times of the year that limits use of the soil.
- The Leahy soil is affected by salt. If the range is in poor condition, salts concentrate on the bare surface as a result of evaporation. Reseeding is very difficult, and only salt-tolerant species should be used.

Irrigated cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope, water erosion, and slow and very slow permeability.

153—Emdent silt loam, 0 to 3 percent slopes

Composition

Emdent soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backswamps of streams and basin areas on till plains
Parent material: Alluvium derived from volcanic ash and loess
Slope range: 0 to 3 percent
Elevation: 1,800 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 18 inches—grayish brown, calcareous silt loam

Upper part of subsoil:
18 to 26 inches—light brownish gray, calcareous silt loam

Lower part of subsoil:
26 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Ponded for long periods in February through May
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Moderate
Water table: Present in January through December (see “Water Features” table)
Salinity: Slightly saline throughout

Contrasting Inclusions

- Bossburg soils
- Nespelem soils
- Soils that are well drained and have rock fragments in the subsoil
- Ahtanum soils
- Poween soils

Major Uses

Livestock grazing, wildlife habitat, watershed, and nonirrigated hay and pasture

Use and Management

Livestock grazing

- This soil has a high water table at certain times of the year that limits use of the soil.
- This soil is affected by salt. If the range is in poor condition, salts concentrate on the bare surface as a result of evaporation. Reseeding is very difficult, and only salt-tolerant species should be used.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wetness.

154—Emdent silt loam, wet, 0 to 2 percent slopes

Composition

Emdent soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Basin areas on till plains and backswamps of streams
Parent material: Alluvium derived from volcanic ash and loess
Slope range: 0 to 2 percent
Elevation: 1,800 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 26 inches—dark gray and gray, calcareous silt loam

Subsoil:
26 to 36 inches—gray, calcareous silt loam

Upper part of substratum:
36 to 38 inches—light gray loam

Lower part of substratum:
38 to 60 inches—light brownish gray and white silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Ponded for long periods in March through May
Hazard of water erosion: Rangeland—none
Hazard of wind erosion (bare surface): Moderate
Water table: Present in January through December (see “Water Features” table)
Frequency of flooding: Rare
Salinity: Slightly saline in the upper 26 inches and very slightly saline between depths of 26 and 60 inches

Contrasting Inclusions

- Bossburg soils
- Nespelem soils
- Soils that are well drained and have more rock fragments in the substratum
- Ahtanum soils
- Poween soils

Major Uses

Livestock grazing, wildlife habitat, wetland wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil has a high water table at certain times of the year that limits use of the soil.
- This soil is affected by salt. If the range is in poor condition, salts concentrate on the bare surface as a result of evaporation. Reseeding is very difficult, and only salt-tolerant species should be used.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wetness.

155—Ewall coarse sand, 0 to 10 percent slopes

Composition

Ewall soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces that have dunelike relief (fig. 8)
Parent material: Sandy glacial outwash and eolian sand
Slope range: 0 to 10 percent
Elevation: 1,400 to 1,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 120 to 150 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 7 inches—grayish brown coarse sand

Upper part of substratum:
7 to 26 inches—light brownish gray coarse sand

Lower part of substratum:
26 to 60 inches—light gray coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches

Figure 8.—Area of Ewall coarse sand, 0 to 10 percent slopes. The ecological site is ponderosa pine/antelope bitterbrush-Idaho fescue.

Runoff: Very slow
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Very severe

Contrasting Inclusions

- Bong soils
- Phoebe and Picard soils
- Soils that have a loamy fine sand surface layer

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable
General management considerations:
- The risk of displacement and erosion can be reduced by using low-pressure ground equipment and designated skid trails, avoiding logging during thawing in spring, and logging in areas covered with snow.
- Dustiness and degradation of the surface of roads can be reduced by watering, mulching, or surfacing.

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by fast infiltration, droughtiness, and steepness of slope.

156—Ewall coarse sand, 10 to 25 percent slopes

Composition

Ewall soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces that have dunelike relief
Parent material: Sandy glacial outwash and eolian sand
Slope range: 10 to 25 percent
Elevation: 1,400 to 1,800 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 120 to 150 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 7 inches—grayish brown coarse sand

Upper part of substratum:
7 to 26 inches—light brownish gray coarse sand

Lower part of substratum:
26 to 60 inches—light gray coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Very severe

Contrasting Inclusions

• Bong soils
• Phoebe and Picard soils
• Dart soils
• Soils that have a loamy fine sand surface layer

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

157—Ewall loamy fine sand, 0 to 10 percent slopes

Composition

Ewall soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces
Parent material: Sandy glacial outwash
Slope range: 0 to 10 percent
Elevation: 1,300 to 3,000 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 13 inches—brown loamy fine sand

Upper part of substratum:
13 to 38 inches—pale brown sand

Lower part of substratum:
38 to 60 inches—pale brown gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches

Runoff: Slow
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Hobohill soils
- Picard soils
- Haley soils
- Conconully soils
- Owhi soils

Major Uses

Wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion, steepness of slope, droughtiness, and fast infiltration.

158—Ewall loamy fine sand, 10 to 25 percent slopes

Composition

Ewall soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Sandy glacial outwash
Slope range: 10 to 25 percent
Elevation: 1,300 to 3,000 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 13 inches—brown loamy fine sand

Upper part of substratum:
13 to 38 inches—pale brown sand

Lower part of substratum:
38 to 60 inches—pale brown gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Hobohill soils
- Picard soils
- Haley soils
- Conconully soils
- Owhi soils
- Soils that are very gravelly throughout

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion, steepness of slope, droughtiness, and fast infiltration.

159—Ewall gravelly loamy sand, 30 to 60 percent slopes

Composition

Ewall soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Sandy glacial outwash
Slope range: 30 to 60 percent
Elevation: 1,300 to 3,000 feet
Average annual precipitation: 12 to 15 inches

Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly loamy sand

Substratum:
7 to 60 inches—multicolored gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Rangeland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Hobohill soils
- Picard soils
- Conconully soils
- Fivelakes and Owhi soils
- Soils that are very gravelly throughout

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

160—Farrell fine sandy loam, 0 to 5 percent slopes

Composition

Farrell soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glaciofluvial material mixed with loess
Slope range: 0 to 5 percent
Elevation: 850 to 1,500 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—brown fine sandy loam

Upper part of subsoil:
10 to 22 inches—pale brown fine sandy loam

Lower part of subsoil:
22 to 60 inches—pale brown and light brownish gray, calcareous fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony, bouldery, or very bouldery surface
- Aeneas soils
- Pogue soils
- Peshastin soils
- Rock outcrop

Major Uses

Livestock grazing, nonirrigated cropland, irrigated orchards, irrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

161—Farrell fine sandy loam, 5 to 10 percent slopes

Composition

Farrell soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces
Parent material: Glaciofluvial material mixed with loess
Slope range: 5 to 10 percent
Elevation: 850 to 1,500 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—brown fine sandy loam

Upper part of subsoil:
10 to 22 inches—pale brown fine sandy loam

Lower part of subsoil:
22 to 60 inches—pale brown and light brownish gray, calcareous fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony, bouldery, or very bouldery surface
- Aeneas soils
- Pogue soils
- Peshastin soils
- Rock outcrop

Major Uses

Livestock grazing, nonirrigated cropland, irrigated orchards, irrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

162—Farrell fine sandy loam, 10 to 25 percent slopes

Composition

Farrell soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glaciofluvial material mixed with loess
Slope range: 10 to 25 percent
Elevation: 1,000 to 1,500 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—brown fine sandy loam

Upper part of subsoil:
10 to 22 inches—pale brown fine sandy loam

Lower part of subsoil:
22 to 60 inches—pale brown and light brownish gray, calcareous fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony, bouldery, or very bouldery surface
- Aeneas soils
- Pogue soils
- Peshastin soils
- Rock outcrop

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

163—Farrell very bouldery fine sandy loam, 0 to 20 percent slopes

Composition

Farrell soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glaciofluvial material mixed with loess
Slope range: 0 to 20 percent
Elevation: 1,000 to 1,500 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Boulders and stones cover 3 to 15 percent

Typical Profile

Surface layer:
0 to 8 inches—brown very bouldery fine sandy loam

Upper part of subsoil:
8 to 22 inches—pale brown fine sandy loam

Middle part of subsoil:
22 to 40 inches—light yellowish brown and light brownish gray, calcareous sandy loam

Lower part of subsoil:
40 to 60 inches—light yellowish brown, calcareous fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Aeneas soils
- Pogue soils
- Peshastin soils
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and large stones.

164—Fivelakes extremely bouldery sandy loam, 30 to 50 percent slopes

Composition

Fivelakes soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Dissected outwash terrace escarpments
Parent material: Glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 30 to 50 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Boulders and stones cover 15 to 50 percent

Typical Profile

Surface layer:
0 to 10 inches—brown extremely bouldery sandy loam

Subsoil:
10 to 28 inches—pale brown very gravelly sandy loam

Upper part of substratum:
28 to 38 inches—pale brown very gravelly loamy coarse sand

Lower part of substratum:
38 to 60 inches—pale brown extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that are very cobbly or very gravelly sand below a depth of about 10 inches
- Conconully soils that have a gravelly sandy loam subsoil and substratum
- Hobohill soils that have a sandy substratum and have fewer rock fragments
- Soils that have bedrock at a depth of 40 to 60 inches

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, or brush management using ground equipment.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

165—Fivelakes fine sandy loam, moist, 0 to 5 percent slopes

Composition

Fivelakes soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Glacial outwash terraces
Parent material: Glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 0 to 5 percent
Elevation: 1,800 to 2,500 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 10 inches—dark brown fine sandy loam

Upper part of subsoil:
10 to 14 inches—pale brown gravelly sandy loam

Lower part of subsoil:
14 to 30 inches—pale brown very gravelly sandy loam

Substratum:
30 to 60 inches—pale brown extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe
Water table: Present in March and April (see “Water Features” table)
Frequency of flooding: Rare

Contrasting Inclusions

- Ralsen soils
- Coxlake soils
- Aquic Xerofluvents

Major Uses

Irrigated hay and pasture, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil has a high water table at certain times of the year that limits use of the soil.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion and droughtiness.

166—Fivelakes stony loam, 0 to 25 percent slopes

Composition

Fivelakes soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces
Parent material: Glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 0 to 25 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 4 inches—dark grayish brown stony loam

Lower part of surface layer:
4 to 12 inches—dark grayish brown gravelly loam

Upper part of subsoil:
12 to 20 inches—yellowish brown cobbly loam

Lower part of subsoil:
20 to 32 inches—brown very cobbly sandy loam

Substratum:
32 to 60 inches—multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Haley and Picard soils
- Soils that have an extremely bouldery surface
- Soils that are very gravelly sand throughout

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and droughtiness.

167—Fivelakes stony loam, 30 to 65 percent slopes

Composition

Fivelakes soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Dissected outwash terrace escarpments
Parent material: Glacial outwash with loess in the upper part
Slope range: 30 to 65 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 4 inches—dark grayish brown stony loam

Lower part of surface layer:
4 to 12 inches—dark grayish brown gravelly loam

Upper part of subsoil:
12 to 20 inches—yellowish brown cobbly loam

Lower part of subsoil:
20 to 32 inches—brown very cobbly sandy loam

Substratum:
32 to 60 inches—multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid

Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have bedrock at a depth of 20 to 60 inches
- Haley and Picard soils
- Rock outcrop

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

168—Fivelakes extremely bouldery loam, 0 to 30 percent slopes

Composition

Fivelakes soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces
Parent material: Glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 0 to 30 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Boulders and stones cover 15 to 50 percent

Typical Profile

Upper part of surface layer:
0 to 4 inches—grayish brown extremely bouldery loam

Lower part of surface layer:
4 to 12 inches—grayish brown very bouldery loam

Upper part of subsoil:
12 to 18 inches—light yellowish brown very stony loam

Lower part of subsoil:
18 to 30 inches—light yellowish brown very stony sandy loam

Substratum:
30 to 60 inches—multicolored extremely cobbly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have a stony surface
- Haley and Picard soils
- Soils that are very gravelly sand throughout

Major Uses

Livestock grazing, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If the soil in this unit is used for irrigated crops, it is limited by steepness of slope, large stones, and droughtiness.

169—Friedlander silt loam, 0 to 20 percent slopes

Composition

Friedlander soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Mantle of loess and volcanic ash over

residuum and some colluvium derived from granitic and metamorphic rock
Slope range: 0 to 20 percent
Elevation: 2,400 to 4,000 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 8 inches—pale brown silt loam

Subsurface layer:
8 to 23 inches—very pale brown loam

Lower part of subsoil:
23 to 60 inches—brown silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow and slow
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Brusher and Henneway soils
- Dinkelman soils
- Centralpeak soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and moderately slow and slow permeability.

170—Friedlander silt loam, 20 to 40 percent slopes

Composition

Friedlander soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Mantle of loess and volcanic ash over residuum and some colluvium derived from granitic and metamorphic rock
Slope range: 20 to 40 percent
Elevation: 2,400 to 4,000 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 8 inches—pale brown silt loam

Subsurface layer:
8 to 23 inches—very pale brown loam

Lower part of subsoil:
23 to 60 inches—brown silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow and slow
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Brusher and Henneway soils
- Dinkelman soils
- Centralpeak soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

171—Friedlander silt loam, dry, 0 to 20 percent slopes

Composition

Friedlander soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Mantle of loess and volcanic ash over residuum and some colluvium derived from granitic rock
Slope range: 0 to 20 percent
Elevation: 2,400 to 2,700 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 8 inches—pale brown silt loam

Subsurface layer:
8 to 23 inches—very pale brown loam

Lower part of subsoil:
23 to 60 inches—brown silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow and slow
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Brusher and Georgecreek soils
- Centralpeak soils
- Dinkelman soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and moderately slow and slow permeability.

172—Garrison loam, 0 to 5 percent slopes

Composition

Garrison soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces
Parent material: Glacial outwash mixed with a

component of loess and volcanic ash in the upper part
Slope range: 0 to 5 percent
Elevation: 1,600 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 12 inches—dark grayish brown loam

Upper part of subsoil:
12 to 18 inches—brown gravelly loam

Lower part of subsoil:
18 to 28 inches—yellowish brown very gravelly sandy loam

Upper part of substratum:
28 to 41 inches—pale brown very gravelly coarse sand

Lower part of substratum:
41 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Hallcreek soils
- Springdale soils
- Soils that have a stony or very stony surface
- Phoebe soils

Major Uses

Timber production, nonirrigated and irrigated hay and pasture, livestock grazing, building site development, wildlife habitat, recreation, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by droughtiness.

173—Garrison loam, 5 to 15 percent slopes

Composition

Garrison soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces
Parent material: Glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 15 percent
Elevation: 1,600 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 12 inches—dark grayish brown loam

Upper part of subsoil:
12 to 18 inches—brown gravelly loam

Lower part of subsoil:
18 to 28 inches—yellowish brown very gravelly sandy loam

Upper part of substratum:
28 to 41 inches—pale brown very gravelly coarse sand

Lower part of substratum:
41 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Hallcreek soils
- Springdale soils
- Soils that have a stony or very stony surface
- Phoebe soils

Major Uses

Timber production, nonirrigated and irrigated hay and pasture, livestock grazing, building site development, wildlife habitat, recreation, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

174—Garrison gravelly loam, 15 to 30 percent slopes

Composition

Garrison soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terrace escarpments
Parent material: Glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 15 to 30 percent
Elevation: 1,700 to 2,100 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Surface layer:
0 to 14 inches—dark grayish brown gravelly loam

Subsoil:
14 to 24 inches—yellowish brown very gravelly loam

Substratum:
24 to 60 inches—multicolored very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Springdale soils
- Phoebe and Donavan soils
- Soils that have a stony or very stony surface
- Hallcreek soils

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, wildlife habitat, recreation, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically

Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

175—Georgecreek silt loam, 5 to 20 percent slopes

Composition

Georgecreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Summits and shoulders of hills
Parent material: Residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 1,800 to 3,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 11 inches—grayish brown and brown silt loam

Upper part of subsoil:
11 to 19 inches—light yellowish brown loam

Middle part of subsoil:
19 to 35 inches—light yellowish brown clay loam

Lower part of subsoil:
35 to 53 inches—light yellowish brown clay loam

Substratum:
53 to 58 inches—light yellowish brown loam

Bedrock:
58 to 68 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Soils that are 20 to 40 inches deep to highly weathered granitic rock
• Spokane soils
• Friedlander soils
• Dinkelman soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

176—Georgecreek silt loam, 20 to 40 percent slopes

Composition

Georgecreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of hills
Parent material: Residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,800 to 3,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 11 inches—grayish brown and brown silt loam

Upper part of subsoil:
11 to 19 inches—light yellowish brown loam

Middle part of subsoil:
19 to 35 inches—light yellowish brown clay loam

Lower part of subsoil:
35 to 53 inches—light yellowish brown clay loam

Substratum:
53 to 58 inches—light yellowish brown loam

Bedrock:
58 to 68 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: 40 to 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that are 20 to 40 inches deep to highly weathered granitic rock
- Spokane soils
- Friedlander soils
- Dinkelman soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

177—Georgecreek silt loam, warm, 5 to 20 percent slopes

Composition

Georgecreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Summits and shoulders of hills
Parent material: Residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 1,800 to 3,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 8 inches—brown silt loam

Lower part of surface layer:
8 to 12 inches—brown loam

Upper part of subsoil:
12 to 26 inches—pale brown and very pale brown clay loam

Middle part of subsoil:
26 to 45 inches—yellowish brown and light yellowish brown clay loam

Lower part of subsoil:
45 to 55 inches—light yellowish brown gravelly loam

Bedrock:
55 to 65 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that are 20 to 40 inches deep to highly weathered granitic rock
- Spokane soils
- Vanbrunt soils
- Phoebe soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

178—Georgecreek silt loam, warm, 20 to 40 percent slopes

Composition

Georgecreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of hills
Parent material: Residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,800 to 3,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 8 inches—brown silt loam

Lower part of surface layer:
8 to 12 inches—brown loam

Upper part of subsoil:
12 to 26 inches—pale brown and very pale brown clay loam

Middle part of subsoil:
26 to 45 inches—yellowish brown and light yellowish brown clay loam

Lower part of subsoil:
45 to 55 inches—light yellowish brown gravelly loam

Bedrock:
55 to 65 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: 40 to 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Soils that are 20 to 40 inches deep to highly weathered granitic rock
• Spokane soils
• Vanbrunt soils
• Phoebe soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

179—Ginnis stony sandy loam, 30 to 65 percent slopes

Composition

Ginnis soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills
Parent material: Colluvium and residuum derived from granitic rock mixed with loess
Slope range: 30 to 65 percent
Elevation: 1,400 to 1,800 feet
Average annual precipitation: 12 to 15 inches

Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 8 inches—grayish brown stony sandy loam

Lower part of surface layer:
8 to 18 inches—grayish brown sandy loam

Subsoil:
18 to 24 inches—yellowish brown coarse sandy loam

Bedrock:
24 to 34 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Conconully soils
- Tyee soils
- Swakane soils
- Rock outcrop

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

180—Ginnis loam, 15 to 35 percent slopes

Composition

Ginnis soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes, backslopes, and shoulders of hills
Parent material: Residuum and colluvium derived from granitic rock mixed with loess
Slope range: 15 to 35 percent
Elevation: 1,500 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 31 inches—pale brown gravelly sandy loam

Bedrock:
31 to 41 inches—weathered granite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Tyee soils
- Morical soils
- Annum soils
- Soils that are very gravelly below a depth of about 20 inches
- Soils that have a stony or cobbly surface
- Rock outcrop

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too shallow for pond construction.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

181—Ginnis loam, 15 to 35 percent north slopes

Composition

Ginnis soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: North- and east-facing footslopes, backslopes, and shoulders of hills
Parent material: Residuum and colluvium derived from granitic rock mixed with loess
Slope range: 15 to 35 percent
Elevation: 1,500 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 18 inches—dark grayish brown and grayish brown loam

Subsoil:
18 to 23 inches—pale brown gravelly loam

Bedrock:
23 to 33 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Tyee soils
- Morical soils
- Annum soils
- Soils that have a stony surface

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too shallow for pond construction.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

182—Ginnis loams complex, 15 to 35 percent slopes

Composition

Ginnis soil and similar soils: 50 percent
Ginnis soil, north slopes, and similar soils: 40 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Ginnis—south- and west-facing footslopes, backslopes, and shoulders of hills; Ginnis, north slopes—north- and east-facing footslopes, backslopes, and shoulders of hills
Parent material: Residuum and colluvium derived from granitic rock mixed with loess
Slope range: 15 to 35 percent
Elevation: 1,500 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Ginnis

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 31 inches—pale brown gravelly sandy loam

Bedrock:
31 to 41 inches—weathered granitic rock

Ginnis, north slopes

Surface layer:
0 to 18 inches—dark grayish brown and grayish brown loam

Subsoil:
18 to 23 inches—pale brown gravelly loam

Bedrock:
23 to 33 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Tyee soils
- Morical soils
- Annum soils
- Soils that are very gravelly below a depth of about 20 inches
- Soils that have a stony or cobbly surface
- Rock outcrop

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soils in this unit are too shallow for pond construction.
- The soils in this unit are too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

183—Ginnis cobbly loams complex, 15 to 35 percent slopes

Composition

Ginnis soil and similar soils: 50 percent
Ginnis soil, north slopes, and similar soils: 35 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ginnis—south- and west-facing footslopes, backslopes, and shoulders of hills; Ginnis, north slopes—north- and east-facing footslopes, backslopes, and shoulders of hills
Parent material: Residuum and colluvium derived from granitic rock mixed with loess
Slope range: 15 to 35 percent
Elevation: 1,500 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Ginnis

Surface layer:
0 to 9 inches—grayish brown cobbly loam

Upper part of subsoil:
9 to 16 inches—pale brown loam

Lower part of subsoil:
16 to 22 inches—very pale brown loam

Bedrock:
22 to 32 inches—weathered granitic rock

Ginnis, north slopes

Upper part of surface layer:
0 to 12 inches—dark grayish brown cobbly loam

Lower part of surface layer:
12 to 19 inches—grayish brown loam

Subsoil:
19 to 30 inches—pale brown gravelly sandy loam

Bedrock:
30 to 40 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Tyee soils

- Morical soils
- Annum soils
- Soils that are very gravelly below a depth of about 20 inches
- Soils that have a stony surface
- Rock outcrop

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soils in this unit are too shallow for pond construction.
- The soils in this unit are too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

184—Ginnis-Conconully complex, 5 to 30 percent slopes

Composition

Ginnis soil and similar soils: 50 percent
Conconully soil and similar soils: 30 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Toeslopes and footslopes of hills
Parent material: Ginnis—residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash; Conconully—glacial till mixed with a component of loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 1,400 to 2,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Ginnis—none; Conconully—stones cover 0.1 to 3.0 percent

Typical Profile

Ginnis

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 31 inches—pale brown gravelly sandy loam

Bedrock:
31 to 41 inches—weathered granitic rock

Conconully

Surface layer:
0 to 13 inches—grayish brown stony fine sandy loam

Subsoil:
13 to 33 inches—light yellowish brown gravelly fine sandy loam

Substratum:
33 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Ginnis—moderately deep (20 to 40 inches to weathered bedrock); Conconully—moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Ginnis—moderate; Conconully—moderately rapid over slow
Available water capacity: Ginnis—moderate; Conconully—moderately slow
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Ginnis—slight; Conconully—moderate

Contrasting Inclusions

- Soils that are very gravelly or very cobbly
- Tyee soils
- Soils that have a bouldery or very bouldery surface
- Morical soils
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soils in this unit are too shallow for pond construction.
- The soils in this unit are too permeable for

successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If this unit is used for irrigated crops, it is limited by steepness of slope and rooting depth and by large stones on the Conconully soil.

185—Ginnis-Conconully complex, 30 to 65 percent slopes

Composition

Ginnis soil and similar soils: 50 percent
Conconully soil and similar soils: 30 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders, backslopes, and footslopes of hills
Parent material: Ginnis—residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash; Conconully—glacial till mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,600 to 2,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Ginnis—none; Conconully—stones cover 0.1 to 3.0 percent

Typical Profile

Ginnis

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 31 inches—pale brown gravelly sandy loam

Bedrock:
31 to 41 inches—weathered granitic rock

Conconully

Surface layer:
0 to 12 inches—grayish brown stony fine sandy loam

Subsoil:
12 to 21 inches—light yellowish brown gravelly fine sandy loam

Substratum:
21 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Ginnis—moderately deep (20 to 40 inches to weathered bedrock); Conconully—moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Ginnis—moderate; Conconully—moderately rapid over slow
Available water capacity: Ginnis—moderate; Conconully—moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Ginnis—slight; Conconully—moderate

Contrasting Inclusions

• Soils that are very gravelly or very cobbly
• Tyee soils
• Soils that have a very bouldery surface
• Morical soils
• Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
• The Ginnis soil is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
• The soils in this unit are too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

186—Ginnis-Rock outcrop complex, 30 to 65 percent slopes

Composition

Ginnis soil and similar soils: 70 percent

Rock outcrop: 10 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders and backslopes of hills
Parent material: Residuum and colluvium derived from granitic rock mixed with loess
Slope range: 30 to 65 percent
Elevation: 1,900 to 3,000 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Ginnis Soil

Typical profile

Upper part of surface layer:
0 to 8 inches—grayish brown stony sandy loam

Lower part of surface layer:
8 to 18 inches—grayish brown gravelly sandy loam

Subsoil:
18 to 24 inches—yellowish brown gravelly sandy loam

Bedrock:
24 to 34 inches—weathered granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Soils that are very gravelly or very cobbly
- Tyee soils
- Swakane soils

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

187—Glenrose silt loam, 8 to 15 percent slopes

Composition

Glenrose soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes of foothills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 8 to 15 percent
Elevation: 1,300 to 2,900 feet
Average annual precipitation: 17 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 16 inches—dark grayish brown, grayish brown, and brown silt loam

Subsurface layer:
16 to 27 inches—pale brown loam

Upper part of subsoil:
27 to 39 inches—very pale brown loam

Lower part of subsoil:
39 to 60 inches—very pale brown gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none

Hazard of water erosion: Cropland—moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Cedonia soils
- Donavan and Phoebe soils
- Stevens soils
- Dehart and Borgeau soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, building site development, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

188—Glenrose silt loam, 15 to 30 percent slopes

Composition

Glenrose soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and shoulders of foothills
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 15 to 30 percent
Elevation: 1,300 to 2,900 feet
Average annual precipitation: 17 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 16 inches—dark grayish brown, grayish brown, and brown silt loam

Subsurface layer:
16 to 27 inches—pale brown loam

Upper part of subsoil:
27 to 39 inches—very pale brown loam

Lower part of subsoil:
39 to 60 inches—very pale brown gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Cedonia soils
- Donavan and Phoebe soils
- Stevens soils
- Dehart and Borgeau soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

189—Goddard silt loam, 0 to 20 percent slopes

Composition

Goddard soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash with a mantle of volcanic ash
Slope range: 0 to 20 percent
Elevation: 2,000 to 3,900 feet
Average annual precipitation: 16 to 19 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 10 inches—pale brown silt loam

Lower part of subsoil:
10 to 18 inches—pale brown gravelly sandy loam

Upper part of substratum:
18 to 30 inches—pale brown very gravelly loamy sand

Lower part of substratum:
30 to 60 inches—multicolored very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Parmenter and Stepstone soils
- Wapal soils
- Sacheen soils
- Torboy soils
- Stapaloop soils
- Nevine soils
- Scrabblers soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and lodgepole pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

190—Goddard silt loam, 20 to 40 percent slopes

Composition

Goddard soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash with a mantle of volcanic ash
Slope range: 20 to 40 percent
Elevation: 2,000 to 3,900 feet
Average annual precipitation: 16 to 19 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 10 inches—pale brown silt loam

Lower part of subsoil:
10 to 18 inches—pale brown gravelly sandy loam

Upper part of substratum:
18 to 30 inches—pale brown very gravelly loamy sand

Lower part of substratum:
30 to 60 inches—multicolored very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion: Slight

Contrasting Inclusions

- Parmenter and Stepstone soils
- Wapal soils
- Sacheen soils
- Torboy soils
- Stapaloop soils
- Nevine soils
- Scrabblers soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and lodgepole pine—readily; western larch—periodically
Limitations for planting: None

191—Goddard silt loam, 40 to 65 percent slopes

Composition

Goddard soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash with a mantle of volcanic ash
Slope range: 40 to 65 percent
Elevation: 2,000 to 3,900 feet
Average annual precipitation: 16 to 19 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—grayish brown silt loam

Upper part of subsoil:
3 to 10 inches—pale brown silt loam

Lower part of subsoil:
10 to 18 inches—pale brown gravelly sandy loam

Upper part of substratum:
18 to 30 inches—pale brown very gravelly loamy sand

Lower part of substratum:
30 to 60 inches—multicolored very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Wapal soils
- Sacheen soils
- Torboy soils
- Nevine soils
- Scrabblers soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and lodgepole pine—readily; western larch—periodically
Limitation for planting: Steepness of slope

192—Goldlake silt loam, 0 to 8 percent slopes

Composition

Goldlake soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Swales and draws of glaciated foothills
Parent material: Glacial till mixed with loess, volcanic ash, and slope alluvium in the upper part
Slope range: 0 to 8 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 22 inches—dark grayish brown and grayish brown silt loam

Upper part of subsoil:
22 to 29 inches—pale brown gravelly loam

Lower part of subsoil:
29 to 40 inches—very pale brown gravelly sandy loam

Substratum:
40 to 60 inches—mottled, very pale brown dense glacial till that crushes to gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Moderately well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in March through May (see “Water Features” table)

Contrasting Inclusions

- Donavan soils
- Soils that are very gravelly below a depth of about 20 inches
- Republic and Lostcreek soils
- Soils that are somewhat poorly drained

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth.

193—Gooseflats fine sandy loams complex, 0 to 2 percent slopes

Composition

Gooseflats soil, somewhat poorly drained, and similar soils: 55 percent
Gooseflats soil, moderately well drained, and similar soils: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Swells in draws and valley flats (fig. 9)
Parent material: Alluvium derived from glacial outwash
Slope range: 0 to 2 percent
Elevation: 800 to 2,400 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Figure 9.—Area of Gooseflats fine sandy loams complex, 0 to 2 percent slopes, in foreground. Swakane soils are on hills in background.

Typical Profile

Gooseflats, somewhat poorly drained

Surface layer:
0 to 7 inches—grayish brown, calcareous fine sandy loam

Upper part of subsoil:
7 to 30 inches—light brownish gray, calcareous loamy fine sand

Lower part of subsoil:
30 to 41 inches—light gray, calcareous fine sand

41 to 48 inches—light gray hardpan

Substratum:
48 to 60 inches—light gray, calcareous fine sand

Gooseflats, moderately well drained

Upper part of surface layer:
0 to 7 inches—grayish brown, calcareous fine sandy loam

Lower part of surface layer:
7 to 10 inches—grayish brown, calcareous loamy fine sand

Upper part of subsoil:
10 to 28 inches—light brownish gray, calcareous loamy fine sand

Lower part of subsoil:
28 to 60 inches—light gray, calcareous loamy fine sand and fine sand

Soil Properties and Qualities

Depth class: Gooseflats, somewhat poorly drained—deep (40 to 60 inches to a hardpan); Gooseflats, moderately well drained—very deep (more than 60 inches)
Permeability: Moderately rapid
Available water capacity: Low
Potential rooting depth: Gooseflats, somewhat poorly drained—40 to 60 inches; Gooseflats, moderately well drained—more than 60 inches
Runoff: Gooseflats, somewhat poorly drained—ponded for long periods in March and April; Gooseflats, moderately well drained—slow
Hazard of water erosion: Rangeland—slight; cropland—slight
Hazard of wind erosion (bare surface): Severe
Water table: Present in January through May (see "Water Features" table)
Salinity: Strongly saline in the upper 7 inches and moderately saline between depths of 7 and 60 inches

Contrasting Inclusions

- Soils that are fine sandy loam throughout
- Soils that have a sandy surface layer
- Ratlake soils
- Emdent soils
- Quincy soils

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- The soils in this unit have a high water table at certain times of the year that limits use of the soils.
- The soils in this unit have limited available soil moisture. Seeding is not recommended.
- The soils in this unit are affected by salt. If the range is in poor condition, salts concentrate on the bare surface as a result of evaporation. Reseeding is very difficult, and only salt-tolerant species should be used.

Irrigated cropland

- If the soils in this unit are used for irrigated crops, they are limited by wind erosion and wetness.

194—Growden channery silt loam, 20 to 50 percent slopes

Composition

Growden soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: South-facing backslopes of mountains
Parent material: Residuum and colluvium derived from schist, quartzite, and granitic gneiss with a mantle of loess and volcanic ash
Slope range: 20 to 50 percent
Elevation: 5,500 to 6,500 feet
Average annual precipitation: 25 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Upper part of surface layer:
0 to 4 inches—dark grayish brown channery silt loam

Lower part of surface layer:
4 to 10 inches—brown flaggy silt loam

Upper part of subsoil:
10 to 16 inches—yellowish brown very channery silt loam

Lower part of subsoil:
16 to 22 inches—light yellowish brown very flaggy silt loam

Substratum:
22 to 60 inches—very pale brown extremely flaggy sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Togo soils
- Buhrig soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir and lodgepole pine—readily; Douglas-fir and western larch—periodically
Limitation for planting: Rock fragments in the soil

195—Hadencreek silt loam, 0 to 8 percent slopes

Composition

Hadencreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Glacial lake terraces and basins
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 0 to 8 percent
Elevation: 1,700 to 3,600 feet
Average annual precipitation: 16 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days

Typical Profile

Surface layer:
0 to 13 inches—grayish brown silt loam

Upper part of subsoil:
13 to 32 inches—pale brown and pale yellow silt loam

Middle part of subsoil:
32 to 40 inches—pale yellow, calcareous silty clay loam

Lower part of subsoil:
40 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through May (see “Water Features” table)

Contrasting Inclusions

- Martella soils
- Ret soils
- Sanpoil soils

Major Uses

Nonirrigated cropland, nonirrigated hay and pasture, watershed, and wildlife habitat

Use and Management

Nonirrigated cropland

- If this soil is used for nonirrigated crops, it is limited by a short frost-free period, water erosion, depth to the calcareous subsoil, moderately slow permeability, a moderately slow water intake rate, susceptibility to compaction, and soil wetness.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wetness, steepness of slope, and water erosion.

196—Haley fine sandy loam, 0 to 5 percent slopes

Composition

Haley soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 0 to 5 percent
Elevation: 1,500 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown fine sandy loam

Subsoil:
12 to 28 inches—pale brown fine sandy loam

Upper part of substratum:
28 to 40 inches—brown and pale brown loamy sand

Lower part of substratum:
40 to 60 inches—multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Ewall soils
- Fivelakes and Owhi soils
- Nespelem soils
- Disautel and Conconully soils
- Poween soils

Major Uses

Livestock grazing, nonirrigated cropland, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

197—Haley fine sandy loam, 5 to 10 percent slopes

Composition

Haley soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 5 to 10 percent
Elevation: 1,500 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown fine sandy loam

Subsoil:
12 to 28 inches—pale brown fine sandy loam

Upper part of substratum:
28 to 40 inches—brown and pale brown loamy sand

Lower part of substratum:
40 to 60 inches—multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Ewall soils
- Fivelakes and Owhi soils
- Nespelem soils
- Disautel and Conconully soils

Major Uses

Livestock grazing, nonirrigated cropland, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

198—Haley fine sandy loam, 10 to 25 percent slopes

Composition

Haley soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 10 to 25 percent
Elevation: 1,500 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown fine sandy loam

Subsoil:
12 to 28 inches—pale brown fine sandy loam

Upper part of substratum:
28 to 40 inches—brown and pale brown loamy sand

Lower part of substratum:
40 to 60 inches—multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Ewall soils
- Fivelakes and Owhi soils
- Nespelem soils
- Disautel and Conconully soils

Major Uses

Livestock grazing, nonirrigated cropland, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

199—Hallcreek loam, 0 to 10 percent slopes

Composition

Hallcreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash with a mantle of volcanic ash and loess
Slope range: 0 to 10 percent
Elevation: 1,700 to 2,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—brown loam

Upper part of subsoil:
3 to 11 inches—pale brown loam

Lower part of subsoil:
11 to 17 inches—light yellowish brown gravelly sandy loam

Substratum:
17 to 60 inches—light gray extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderate over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none

Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Garrison soils
- Bisbee soils
- Phoebe soils

Major Uses

Nonirrigated and irrigated cropland and hay and pasture, building site development, timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by droughtiness and steepness of slope.

200—Haploxerolls, 30 to 70 percent slopes

Composition

Haploxerolls and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terrace escarpments with dominantly north- and east-facing slopes
Parent material: Glacial outwash, glaciofluvial material, and glacial lake sediment
Slope range: 30 to 70 percent
Elevation: 1,200 to 2,600 feet
Average annual precipitation: 11 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Reference Profile

Upper part of surface layer:
0 to 3 inches—grayish brown gravelly sandy loam

Lower part of surface layer:
3 to 11 inches—brown very gravelly sandy loam

Upper part of substratum:
11 to 17 inches—pale brown very gravelly loamy sand

Middle part of substratum:
17 to 35 inches—light brownish gray very gravelly sand

Lower part of substratum:
35 to 60 inches—light gray gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained and somewhat excessively drained
Permeability: Moderate to rapid
Available water capacity: Low to moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium to very rapid
Hazard of water erosion: Rangeland—moderate to very severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a very stony or extremely stony surface
- Xeric Torriorthents that have a light-colored surface layer

Major Uses

Limited livestock grazing, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

201—Hartill silt loam, dry, 20 to 40 percent slopes

Composition

Hartill soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of mountains

Parent material: Mantle of volcanic ash over residuum and colluvium derived from metamorphic rock
Slope range: 20 to 40 percent
Elevation: 2,300 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—brown silt loam

Upper part of subsoil:
6 to 14 inches—light yellowish brown silt loam

Lower part of subsoil:
14 to 30 inches—pale brown very channery sandy loam

Substratum:
30 to 39 inches—pale brown extremely flaggy sandy loam

Bedrock:
39 to 43 inches—graywacke

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Wilmont soils
- Elbowlake soils
- Raisio soils
- Inkler soils
- Soils that have bedrock at a depth of less than 20 inches
- Henneway soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, western larch, and grand fir—readily
Limitations for planting: None

202—Hartill silt loam, dry, 40 to 65 percent slopes

Composition

Hartill soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash and loess over residuum and colluvium derived from metamorphic rock
Slope range: 40 to 65 percent
Elevation: 2,300 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—brown silt loam

Upper part of subsoil:
6 to 14 inches—light yellowish brown silt loam

Lower part of subsoil:
14 to 30 inches—pale brown very channery sandy loam

Substratum:
30 to 39 inches—pale brown extremely flaggy sandy loam

Bedrock:
39 to 43 inches—graywacke

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate

Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Wilmont soils
- Elbowlake soils
- Raisio soils
- Inkler soils
- Soils that have bedrock at a depth of less than 20 inches
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, western larch, and grand fir—readily
Limitation for planting: Steepness of slope

203—Hellgate gravelly coarse sandy loam, 3 to 20 percent slopes

Composition

Hellgate soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes of mountains, and fan terraces
Parent material: Residuum, colluvium, and valley fill derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 3 to 20 percent
Elevation: 1,600 to 2,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 8 inches—grayish brown gravelly coarse sandy loam

Upper part of subsoil:
8 to 12 inches—pale brown gravelly coarse sandy loam

Lower part of subsoil:
12 to 25 inches—very pale brown gravelly coarse sandy loam

Upper part of substratum:
25 to 36 inches—pale brown very gravelly loamy coarse sand

Lower part of substratum:
36 to 60 inches—multicolored very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Spokane soils
- Georgecreek soils
- Whitestone soils
- Phoebe soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically

Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

204—Hellgate gravelly loam, cool, 3 to 15 percent slopes

Composition

Hellgate soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes of mountains, and fan terraces
Parent material: Colluvium, residuum, and valley fill derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 3 to 15 percent
Elevation: 1,600 to 2,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Surface layer:
0 to 9 inches—grayish brown gravelly loam

Subsoil:
9 to 22 inches—pale brown gravelly sandy loam

Upper part of substratum:
22 to 50 inches—pale brown gravelly coarse sandy loam

Lower part of substratum:
50 to 60 inches—very pale brown gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Spokane soils
• Georgecreek soils
• Whitestone soils
• Phoebe soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

205—Henneway silt loam, 0 to 20 percent slopes

Composition

Henneway soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and footslopes of hills and mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metasedimentary rock
Slope range: 0 to 20 percent
Elevation: 2,400 to 3,700 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—dark yellowish brown silt loam

Upper part of subsoil:
3 to 10 inches—yellowish brown silt loam

Subsurface layer:
10 to 28 inches—brown and pale brown silt loam

Middle part of subsoil:
28 to 49 inches—yellowish brown silty clay loam and light olive brown channery silty clay loam

Lower part of subsoil:
49 to 59 inches—olive yellow channery clay loam and light olive brown channery silt loam

Bedrock:
59 to 63 inches—phyllite

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Friedlander soils
- Brusher soils
- Renha soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, grand fir, and western larch—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

206—Henneway silt loam, 20 to 40 percent slopes

Composition

Henneway soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes of hills and mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metasedimentary rock
Slope range: 20 to 40 percent
Elevation: 2,400 to 3,700 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 3 inches—dark yellowish brown silt loam

Upper part of subsoil:
3 to 10 inches—yellowish brown silt loam

Subsurface layer:
10 to 28 inches—brown and pale brown silt loam

Middle part of subsoil:
28 to 49 inches—yellowish brown silty clay loam and light olive brown channery silty clay loam

Lower part of subsoil:
49 to 59 inches—olive yellow channery clay loam and light olive brown channery silt loam

Bedrock:
59 to 63 inches—phyllite

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: 40 to 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Friedlander soils
- Brusher soils
- Hartill soils
- Wellscreek soils
- Renha soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, grand fir, and western larch—readily
Limitations for planting: None

207—Henneway silt loam, warm, 20 to 40 percent slopes

Composition

Henneway soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes of hills and mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metasedimentary rock
Slope range: 20 to 40 percent
Elevation: 2,400 to 3,700 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—brown silt loam

Upper part of subsoil:
3 to 13 inches—light yellowish brown silt loam

Subsurface layer:
13 to 22 inches—light brownish gray loam

Lower part of subsoil:
22 to 45 inches—pale brown channery loam

Substratum:
45 to 58 inches—light brownish gray channery loam

Bedrock:
58 to 62 inches—phyllite

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: 40 to 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Friedlander soils
- Brusher soils
- Oxerine soils
- Wellscreek soils
- Renha soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

208—Heytou-Stubblefield stony loams complex, 25 to 65 percent slopes

Composition

Heytou soil and similar soils: 50 percent
Stubblefield soil and similar soils: 40 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backslopes of glaciated hills
Parent material: Glacial till derived from basalt mixed with loess in the upper part
Slope range: 25 to 65 percent
Elevation: 1,200 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Heytou

Upper part of surface layer:
0 to 4 inches—gray stony loam

Lower part of surface layer:
4 to 16 inches—grayish brown gravelly loam

Upper part of subsoil:
16 to 30 inches—grayish brown very cobbly loam

Middle part of subsoil:
30 to 40 inches—light brownish gray, calcareous dense glacial till that crushes to very cobbly loam

Lower part of subsoil:
40 to 60 inches—gray, calcareous dense glacial till that crushes to very gravelly loam

Stubblefield

Surface layer:
0 to 9 inches—grayish brown stony loam

Upper part of subsoil:
9 to 24 inches—pale brown very gravelly loam

Middle part of subsoil:
24 to 28 inches—light brownish gray hardpan

Lower part of subsoil:
28 to 60 inches—light brownish gray dense glacial till that crushes to very cobbly sandy loam

Soil Properties and Qualities

Depth class: Heytou—moderately deep (20 to 40 inches to dense glacial till); Stubblefield—moderately deep (20 to 40 inches to a hardpan)
Drainage class: Well drained
Permeability: Heytou—moderate over slow; Stubblefield—moderate above the hardpan and slow below the hardpan
Available water capacity: Heytou—moderately high; Stubblefield—low
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Strat soils
- Malott and Timentwa soils
- Soils that have a very stony or extremely stony surface
- Rock outcrop
- Rubble land

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This unit is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

209—Histosols, ponded

Composition

Histosols and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backswamps of flood plains, and depressions surrounding lakes and ponds
Parent material: Decomposed organic matter overlying alluvium that commonly has a large component of volcanic ash
Slope range: 0 to 1 percent
Elevation: 1,500 to 4,000 feet
Average annual precipitation: 10 to 25 inches
Average annual air temperature: 44 to 47 degrees F
Frost-free period: 80 to 150 days

Reference Profile

Surface tier:
0 to 4 inches—black mucky peat

Subsurface tier:
4 to 20 inches—black muck

Upper part of substratum:
20 to 32 inches—very dark brown silt loam

Lower part of substratum:
32 to 60 inches—gray silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Ponded for very long periods in November through August

Hazard of water erosion: None
Hazard of wind erosion (bare surface): None
Water table: Present in January through December (see “Water Features” table)

Contrasting Inclusions

- Borosaprists and Medisaprists
- Ralsen and Sanpoil soils
- Bossburg and Uncas soils
- Open water areas

Major Use

Wetland wildlife habitat

210—Hobohill sandy loam, 40 to 70 percent slopes

Composition

Hobohill soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments with mainly northerly aspects
Parent material: Glacial outwash and alluvium
Slope range: 40 to 70 percent
Elevation: 1,400 to 2,500 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 3 inches—dark grayish brown sandy loam

Lower part of surface layer:
3 to 18 inches—grayish brown sandy loam

Upper part of substratum:
18 to 30 inches—pale brown gravelly loamy sand

Lower part of substratum:
30 to 60 inches—light gray gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Conconully soils
- Ewall soils
- Fivelakes and Owhi soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

211—Hobohill stony sandy loam, 3 to 25 percent slopes

Composition

Hobohill soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Fan terraces and old alluvial fans
Parent material: Glacial outwash and alluvium
Slope range: 3 to 25 percent
Elevation: 1,400 to 2,500 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 3 inches—dark grayish brown stony sandy loam

Lower part of surface layer:
3 to 14 inches—dark grayish brown gravelly sandy loam

Upper part of substratum:
14 to 23 inches—pale brown gravelly loamy coarse sand

Lower part of substratum:
23 to 60 inches—very pale brown gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight to severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Conconully soils
- Ewall soils
- Owhi soils
- Nespelem soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and large stones.

212—Hodgson silt loam, 0 to 5 percent slopes

Composition

Hodgson soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial lake sediment and mudflow deposits mixed with a component of loess and volcanic ash
Slope range: 0 to 5 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—light brownish gray silt loam

Upper part of subsoil:
3 to 28 inches—light brownish gray and light gray silty clay loam

Middle part of subsoil:
28 to 47 inches—light gray silty clay

Lower part of subsoil:
47 to 60 inches—light gray, calcareous silty clay

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Very slow or slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through May (see “Water Features” table)

Contrasting Inclusions

- Jimcreek soils
- Cedonia and Hunters soils
- Donavan soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitation for planting: High clay content

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wetness and water erosion.

213—Hodgson silt loam, 5 to 15 percent slopes

Composition

Hodgson soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 5 to 15 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—light brownish gray silt loam

Upper part of subsoil:
3 to 28 inches—light brownish gray and light gray silty clay loam

Middle part of subsoil:
28 to 47 inches—light gray silty clay

Lower part of subsoil:
47 to 60 inches—light gray, calcareous silty clay

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through May (see “Water Features” table)

Contrasting Inclusions

- Cedonia and Hunters soils
- Donavan soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitation for planting: High clay content

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and water erosion.

214—Hodgson silt loam, 15 to 30 percent slopes

Composition

Hodgson soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 15 to 30 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—light brownish gray silt loam

Upper part of subsoil:
3 to 28 inches—light brownish gray and light gray silty clay loam

Middle part of subsoil:
28 to 47 inches—light gray silty clay

Lower part of subsoil:
47 to 60 inches—light gray, calcareous silty clay

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high

Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through May (see "Water Features" table)

Contrasting Inclusions

- Cedonia and Hunters soils
- Donavan soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitation for planting: High clay content

215—Hodgson silt loam, 30 to 50 percent slopes

Composition

Hodgson soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 30 to 50 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—light brownish gray silt loam

Upper part of subsoil:
3 to 28 inches—light brownish gray and light gray silty clay loam

Middle part of subsoil:
28 to 47 inches—light gray silty clay

Lower part of subsoil:
47 to 60 inches—light gray, calcareous silty clay

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe
Water table: Present in January through May (see "Water Features" table)

Contrasting Inclusions

- Cedonia and Hunters soils
- Lakesol soils
- Donavan soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: High clay content and steepness of slope

216—Hudnut gravelly sandy loam, 0 to 20 percent slopes

Composition

Hudnut soil and similar soils: 85 percent

Contrasting inclusions: 15 percent

Setting

Position on landscape: Till plains and outwash terraces
Parent material: Granitic ablation till and glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 0 to 20 percent
Elevation: 1,800 to 2,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 2 inches—dark grayish brown gravelly sandy loam

Subsoil:
2 to 17 inches—pale brown gravelly sandy loam

Upper part of substratum:
17 to 50 inches—pale brown gravelly sandy loam

Lower part of substratum:
50 to 60 inches—pale brown very gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Garrison soils
- Vanbrunt soils
- Bisbee soils
- Republic soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

217—Hudnut gravelly sandy loam, 20 to 40 percent slopes

Composition

Hudnut soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Escarpments of till plains and outwash terraces
Parent material: Granitic ablation till and glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 1,800 to 2,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 2 inches—dark grayish brown gravelly sandy loam

Subsoil:
2 to 17 inches—pale brown gravelly sandy loam

Upper part of substratum:
17 to 50 inches—pale brown gravelly sandy loam

Lower part of substratum:
50 to 60 inches—pale brown very gravelly loamy sand

Soil Properties and Qualities

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

Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Garrison soils
- Vanbrunt soils
- Bisbee soils
- Republic soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—moderate
Limitation for planting: Rock fragments in the soil

218—Hunters silt loam, 0 to 5 percent slopes

Composition

Hunters soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 0 to 5 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 19 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 10 inches—brown silt loam

Upper part of subsoil:
10 to 28 inches—light brownish gray silt loam

Lower part of subsoil:
28 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Scala soils
- Inchelium soils
- Phoebe soils
- Donavan soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by water erosion.

219—Hunters silt loam, warm, 30 to 65 percent slopes

Composition

Hunters soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,300 to 1,800 feet
Average annual precipitation: 15 to 19 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 110 to 130 days

Typical Profile

Surface layer:
0 to 14 inches—grayish brown silt loam

Upper part of subsoil:
14 to 24 inches—brown silt loam

Lower part of subsoil:
24 to 42 inches—light brownish gray, calcareous silt loam

Substratum:
42 to 60 inches—light brownish gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Scala soils
- Phoebe soils
- Spens soils
- Hodgson soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

220—Inchelium silt loam, 0 to 5 percent slopes

Composition

Inchelium soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces adjacent to uplands
Parent material: Loess and glaciofluvial material over glacial lake sediment
Slope range: 0 to 5 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Upper part of surface layer:
0 to 13 inches—very dark grayish brown silt loam

Lower part of surface layer:
13 to 42 inches—brown and dark grayish brown silt loam

Upper part of subsoil:
42 to 51 inches—pale brown silt loam

Lower part of subsoil:
51 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through June (see “Water Features” table)

Contrasting Inclusions

- Hunters soils
- Cedonia soils
- Stevens soils
- Scala soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated and irrigated hay and

pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by water erosion.

221—Inchelium silt loam, 5 to 10 percent slopes

Composition

Inchelium soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces adjacent to uplands
Parent material: Loess and glaciofluvial material over glacial lake sediment
Slope range: 5 to 10 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Upper part of surface layer:
0 to 13 inches—very dark grayish brown silt loam

Lower part of surface layer:
13 to 42 inches—brown and dark grayish brown silt loam

Upper part of subsoil:
42 to 51 inches—pale brown silt loam

Lower part of subsoil:
51 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through June (see “Water Features” table)

Contrasting Inclusions

- Hunters soils
- Cedonia soils
- Stevens soils
- Scala soils

Major Uses

Nonirrigated and irrigated cropland and hay and pasture, timber production, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

222—Inkler gravelly silt loam, dry, 5 to 20 percent slopes

Composition

Inkler soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Mantle of volcanic ash and loess over glacial till and colluvium derived from volcanic and metamorphic rock
Slope range: 5 to 20 percent
Elevation: 2,000 to 4,200 feet

Average annual precipitation: 16 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown gravelly silt loam

Upper part of subsoil:
3 to 9 inches—light brownish gray gravelly silt loam

Lower part of subsoil:
9 to 18 inches—pale brown gravelly loam

Upper part of substratum:
18 to 31 inches—light brownish gray very gravelly loam

Lower part of substratum:
31 to 60 inches—light brownish gray very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Scoap soils
- Nevine soils
- Apex and Republic soils
- Oxerine and Thout soils
- Soils that have a very stony surface layer

Major Uses

Timber production, livestock grazing, wildlife habitat, nonirrigated hay and pasture, building site development, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

223—Inkler gravelly silt loam, dry, 20 to 40 percent slopes

Composition

Inkler soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Mantle of volcanic ash and loess over glacial till and colluvium derived from volcanic and metamorphic rock
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,200 feet
Average annual precipitation: 16 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown gravelly silt loam

Upper part of subsoil:
3 to 9 inches—light brownish gray gravelly silt loam

Lower part of subsoil:
9 to 18 inches—pale brown gravelly loam

Upper part of substratum:
18 to 31 inches—light brownish gray very gravelly loam

Lower part of substratum:
31 to 60 inches—light brownish gray very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid

Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Scoap soils
- Nevine soils
- Apex and Republic soils
- Oxerine and Thout soils
- Baldknob soils
- Soils that have a very stony surface layer
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

224—Inkler gravelly silt loam, dry, 40 to 65 percent slopes

Composition

Inkler soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Mantle of volcanic ash and loess over glacial till and colluvium derived from volcanic and metamorphic rock
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,200 feet
Average annual precipitation: 16 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown gravelly silt loam

Upper part of subsoil:
3 to 9 inches—light brownish gray gravelly silt loam

Lower part of subsoil:
9 to 18 inches—pale brown gravelly loam

Upper part of substratum:
18 to 31 inches—light brownish gray very gravelly loam

Lower part of substratum:
31 to 60 inches—light brownish gray very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Scoap soils
- Nevine soils
- Apex and Republic soils
- Oxerine and Thout soils
- Baldknob soils
- Soils that have a very stony surface layer
- Rock outcrop

Major Uses

Timber production, wildlife habitat, livestock grazing, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitation for planting: Steepness of slope

225—Inkler, dry-Baldknob-Rock outcrop complex, 5 to 30 percent slopes

Composition

Inkler soil and similar soils: 40 percent
Baldknob soil and similar soils: 25 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Inkler—footslopes and backslopes of mountains; Baldknob—summits and shoulders of mountains (fig. 10)
Parent material: Inkler—mantle of volcanic ash and loess over glacial till or colluvium derived from volcanic and metamorphic rock; Baldknob—dominantly colluvium and residuum derived from volcanic rock and some glacial till with volcanic ash and loess
Slope range: 5 to 30 percent
Elevation: 2,500 to 4,200 feet
Average annual precipitation: 16 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Figure 10.—Area of Inkler, dry-Baldknob-Rock outcrop complex, 5 to 30 percent slopes. The Inkler soil is in the forested drainageways and other concave areas, and the Baldknob soil and Rock outcrop are in the nonforested, convex areas.

Rock fragments on surface: Inkler—none; Baldknob—stones cover 3 to 15 percent

Inkler Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown gravelly silt loam

Upper part of subsoil:
3 to 9 inches—light brownish gray gravelly silt loam

Lower part of subsoil:
9 to 18 inches—pale brown gravelly loam

Upper part of substratum:
18 to 31 inches—light brownish gray very gravelly loam

Lower part of substratum:
31 to 60 inches—light brownish gray very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate

Baldknob Soil

Typical profile

Surface layer:
0 to 4 inches—brown very stony loam

Upper part of subsoil:
4 to 9 inches—brown very gravelly loam

Lower part of subsoil:
9 to 14 inches—yellowish brown extremely gravelly loam

Bedrock:
14 to 18 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate

Rock Outcrop

Kind of rock: Rhyodacite, andesite, and quartz latite

Contrasting Inclusions

- Nevine soils
- Thout soils
- Lithic Xerochrepts
- Inkler soils
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration (Inkler): Douglas-fir and ponderosa pine—readily
Potential for natural regeneration (Baldknob): Ponderosa pine—periodically
Limitations for planting: Inkler—Rock outcrop; Baldknob—rock fragments in the soil, depth to bedrock, and Rock outcrop

226—Inkler, dry-Baldknob-Rock outcrop complex, 30 to 65 percent slopes

Composition

Inkler soil and similar soils: 45 percent
Baldknob soil and similar soils: 20 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Inkler—backslopes of mountains; Baldknob—backslopes and shoulders of mountains
Parent material: Inkler—mantle of volcanic ash and loess over glacial till or colluvium derived from volcanic and metamorphic rock; Baldknob—dominantly colluvium and residuum derived from volcanic rock and some glacial till with volcanic ash and loess

Slope range: 30 to 65 percent
Elevation: 2,500 to 4,200 feet
Average annual precipitation: 16 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Inkler—none; Baldknob—stones cover 3 to 15 percent

Inkler Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown gravelly silt loam

Upper part of subsoil:
3 to 9 inches—light brownish gray gravelly silt loam

Lower part of subsoil:
9 to 18 inches—pale brown gravelly loam

Upper part of substratum:
18 to 31 inches—light brownish gray very gravelly loam

Lower part of substratum:
31 to 60 inches—light brownish gray very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Baldknob Soil

Typical profile

Surface layer:
0 to 4 inches—brown very stony loam

Upper part of subsoil:
4 to 9 inches—brown very gravelly loam

Lower part of the subsoil:
9 to 14 inches—yellowish brown extremely gravelly loam

Bedrock:
14 to 18 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Rhyodacite, andesite, and quartz latite

Contrasting Inclusions

- Nevine soils that are silt loam and have a mantle of volcanic ash 14 to 25 inches thick
- Thout soils that have bedrock at a depth of 20 to 40 inches
- Lithic Xerorthents that have bedrock at a depth of 4 to 10 inches
- Inkler soils that have a very stony or extremely stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion

Silviculture

Potential for natural regeneration (Inkler): Douglas-fir and ponderosa pine—readily
Potential for natural regeneration (Baldknob): Ponderosa pine—periodically
Limitations for planting: Inkler—Rock outcrop and steepness of slope; Baldknob—rock fragments in the soil, depth to bedrock, steepness of slope, and Rock outcrop

227—Inkler, dry-Rock outcrop complex, 20 to 40 percent slopes

Composition

Inkler soil and similar soils: 65 percent

Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Mantle of volcanic ash and loess over glacial till and colluvium derived from volcanic and metamorphic rock
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,200 feet
Average annual precipitation: 16 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Inkler Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown gravelly silt loam

Upper part of subsoil:
3 to 9 inches—light brownish gray gravelly silt loam

Lower part of subsoil:
9 to 18 inches—pale brown gravelly loam

Upper part of substratum:
18 to 31 inches—light brownish gray very gravelly loam

Lower part of substratum:
31 to 60 inches—light brownish gray very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Rhyodacite, phyllite, schist, slate, and graywacke

Contrasting Inclusions

- Scoap soils
- Nevine soils
- Apex and Republic soils
- Oxerine and Thout soils
- Baldknob soils
- Soils that have a very stony surface layer
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitation for planting: Rock outcrop

228—Inkler, dry-Rock outcrop complex, 40 to 65 percent slopes

Composition

Inkler soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Mantle of volcanic ash and loess over glacial till and colluvium derived from volcanic and metamorphic rock
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,200 feet
Average annual precipitation: 16 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Inkler Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—grayish brown gravelly silt loam

Upper part of subsoil:
3 to 9 inches—light brownish gray gravelly silt loam

Lower part of subsoil:
9 to 18 inches—pale brown gravelly loam

Upper part of substratum:
18 to 31 inches—light brownish gray very gravelly loam

Lower part of substratum:
31 to 60 inches—light brownish gray very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Rhyodacite, phyllite, schist, slate, and graywacke

Contrasting Inclusions

- Scoap soils
- Nevine soils
- Apex and Republic soils
- Oxerine and Thout soils
- Baldknob soils
- Soils that have a very stony surface layer
- Rubble land

Major Uses

Timber production, wildlife habitat, livestock grazing, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: Rock outcrop and steepness of slope

229—Jimcreek silt loam, 0 to 5 percent slopes

Composition

Jimcreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Depressions on terraces and lake plains
Parent material: Glacial lake sediment and recent alluvium mixed with volcanic ash
Slope range: 0 to 5 percent
Elevation: 1,600 to 3,100 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 19 inches—dark gray and gray silt loam

Upper part of subsoil:
19 to 36 inches—mottled, light gray silty clay loam

Middle part of subsoil:
36 to 46 inches—mottled, light gray silty clay loam

Lower part of subsoil:
46 to 60 inches—mottled, light gray silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Very slow or slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through July (see “Water Features” table)

Contrasting Inclusions

- Soils that are poorly drained or very poorly drained
- Omak soils
- Ret soils
- Hodgson and Kewach soils

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, wildlife habitat, recreation, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine, Douglas-fir, and western larch—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by wetness and water erosion.

230—Johntom-Rock outcrop-Rubble land complex, 30 to 65 percent slopes

Composition

Johntom soil and similar soils: 65 percent
Rock outcrop: 15 percent
Rubble land: 10 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 14 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Johntom Soil

Typical profile

Upper part of surface layer:
0 to 4 inches—dark brown stony loam

Lower part of surface layer:
4 to 11 inches—brown very gravelly sandy loam

Substratum:
11 to 16 inches—pale brown extremely gravelly coarse sandy loam

Bedrock:
16 to 20 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Rubble Land

Rubble land consists of areas of unconsolidated rock debris, commonly known as talus, on backslopes and footslopes of hills, mountains, and plateaus. Slopes range from 30 to 65 percent. Rock fragments are angular, and they range in size from gravel to boulders. Rubble land commonly is barren, but small areas where soil material has accumulated between rock fragments support a very sparse cover of shrubs, grasses, and forbs.

Contrasting Inclusions

• Wynhoff and Northstar soils
• Soils that have bedrock at a depth of 4 to 10 inches
• Louiecreek soils
• Soils that have a very stony or extremely stony surface
• Baldknob soils

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

• This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
• The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be

buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

231—Karamin fine sandy loam, 0 to 20 percent slopes

Composition

Karamin soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and mountain toeslopes
Parent material: Sandy glacial outwash mixed with a component of loess and volcanic ash in the surface
Slope range: 0 to 20 percent
Elevation: 2,700 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—pale brown fine sandy loam

Subsoil:
6 to 18 inches—light yellowish brown fine sandy loam

Upper part of substratum:
18 to 28 inches—light gray loamy fine sand

Lower part of substratum:
28 to 60 inches—light gray loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Sacheen soils
- Goddard and Parmenter soils
- Louploup soils
- Wapal soils
- Stapaloop soils
- Merkel soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine, western larch, Douglas-fir, and lodgepole pine—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wind erosion and steepness of slope.

232—Karamin fine sandy loam, 20 to 40 percent slopes

Composition

Karamin soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments and mountain footslopes
Parent material: Sandy glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 2,600 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—pale brown fine sandy loam

Subsoil:
6 to 18 inches—light yellowish brown fine sandy loam

Upper part of substratum:
18 to 28 inches—light gray loamy fine sand

Lower part of substratum:
28 to 60 inches—light gray loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Sacheen soils
- Goddard and Parmenter soils
- Louploup soils
- Wapal soils
- Stapaloop soils
- Merkel soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine, western larch, Douglas-fir, and lodgepole pine—readily
Limitations for planting: None

233—Karamin fine sandy loam, 40 to 65 percent slopes

Composition

Karamin soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments and mountain backslopes
Parent material: Sandy glacial outwash mixed with a component of loess and volcanic ash in the upper part
Slope range: 40 to 65 percent
Elevation: 2,600 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—pale brown fine sandy loam

Subsoil:
6 to 18 inches—light yellowish brown fine sandy loam

Upper part of substratum:
18 to 28 inches—light gray loamy fine sand

Lower part of substratum:
28 to 60 inches—light gray loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Sacheen soils
- Wapal soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine,

western larch, Douglas-fir, and lodgepole pine—readily
Limitation for planting: Steepness of slope

234—Kartar sandy loam, warm, 0 to 10 percent slopes

Composition

Kartar soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and till plains
Parent material: Glacial outwash and reworked glacial till mixed with a component of loess and volcanic ash in the upper part
Slope range: 0 to 10 percent
Elevation: 2,000 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—pale brown sandy loam

Upper part of subsoil:
6 to 18 inches—pale brown sandy loam

Lower part of subsoil:
18 to 22 inches—very pale brown gravelly sandy loam

Upper part of substratum:
22 to 42 inches—very pale brown gravelly sand

Lower part of substratum:
42 to 60 inches—light gray fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Donavan soils
- Hudnut soils
- Hallcreek, Springdale, and Spens soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wind erosion, and droughtiness.

235—Kellerbutte silt loam, 20 to 40 percent slopes

Composition

Kellerbutte soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Dominantly north-facing backslopes and footslopes of mountains
Parent material: Volcanic ash over colluvium derived from granitic rock and rhyodacite
Slope range: 20 to 40 percent
Elevation: 2,500 to 5,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 17 inches—pale brown and light yellowish brown gravelly silt loam

Substratum:
17 to 60 inches—light gray very gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have a very stony or extremely stony surface
- Canteen soils
- Capoose and Mineral soils
- Bearspring soils
- Togo soils
- Rock outcrop

Major Uses

Timber production, watershed, wildlife habitat, livestock grazing, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and western larch—readily; ponderosa pine and lodgepole pine—periodically
Limitations for planting: None

236—Kellerbutte silt loam, 40 to 65 percent slopes

Composition

Kellerbutte soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Dominantly north-facing backslopes of mountains
Parent material: Volcanic ash over colluvium derived from granitic rock and rhyodacite
Slope range: 40 to 65 percent
Elevation: 2,500 to 5,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—brown silt loam

Subsoil:
7 to 17 inches—pale brown and light yellowish brown gravelly silt loam

Substratum:
17 to 60 inches—light gray very gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Soils that have a very stony or extremely stony surface
- Canteen soils
- Capoose and Mineral soils
- Bearspring soils
- Togo soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and western larch—readily; ponderosa pine and lodgepole pine—periodically
Limitation for planting: Steepness of slope

237—Kenotrail silt loam, 20 to 40 percent slopes

Composition

Kenotrail soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges and shoulders of hills and mountains
Parent material: Residuum derived from serpentine, greenstone, and talc mixed with volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 3,200 to 3,800 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 9 inches—brown and light brown silt loam

Subsoil:
9 to 32 inches—reddish yellow gravelly silty clay loam

Bedrock:
32 to 42 inches—weathered talc

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Hartill and Oxerine soils
- Soils that are 10 to 20 inches deep to bedrock and are very gravelly throughout
- Friedlander soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: High clay content

238—Kewach silt loam, 0 to 5 percent slopes

Composition

Kewach soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial lake sediment mixed with volcanic ash and loess
Slope range: 0 to 5 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—pale brown silt loam

Subsurface layer:
4 to 10 inches—pale brown silt loam

Upper part of subsoil:
10 to 29 inches—very pale brown, pale yellow, and light gray silt loam

Lower part of subsoil:
29 to 42 inches—brownish yellow and light yellowish brown silty clay loam

Substratum:
42 to 60 inches—light gray, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches

Runoff: Slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through June (see "Water Features" table)

Contrasting Inclusions

- Jimcreek soils
- Cedonia soils
- Hunters soils
- Donavan soils

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by water erosion and wetness.

239—Kewach silt loam, 5 to 15 percent slopes

Composition

Kewach soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial lake sediment mixed with volcanic ash and loess
Slope range: 5 to 15 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—pale brown silt loam

Subsurface layer:
4 to 10 inches—pale brown silt loam

Upper part of subsoil:
10 to 29 inches—very pale brown, pale yellow, and light gray silt loam

Lower part of subsoil:
29 to 42 inches—brownish yellow and light yellowish brown silty clay loam

Substratum:
42 to 60 inches—light gray, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through June (see "Water Features" table)

Contrasting Inclusions

- Cedonia soils
- Hunters soils
- Donavan soils

Major Uses

Timber production, livestock grazing, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and

Douglas-fir—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and water erosion.

240—Kewach silt loam, 15 to 30 percent slopes

Composition

Kewach soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial lake sediment mixed with volcanic ash and loess
Slope range: 15 to 30 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—pale brown silt loam

Subsurface layer:
4 to 10 inches—pale brown silt loam

Upper part of subsoil:
10 to 29 inches—very pale brown, pale yellow, and light gray silt loam

Lower part of subsoil:
29 to 42 inches—brownish yellow and light yellowish brown silty clay loam

Substratum:
42 to 60 inches—light gray, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through June (see "Water Features" table)

Contrasting Inclusions

• Cedonia soils
• Hunters soils
• Donavan soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and water erosion.

241—Kewach silt loam, 30 to 50 percent slopes

Composition

Kewach soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial lake sediment mixed with volcanic ash and loess
Slope range: 30 to 50 percent
Elevation: 1,300 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—pale brown silt loam

Subsurface layer:
4 to 10 inches—pale brown silt loam

Upper part of subsoil:
10 to 29 inches—very pale brown, pale yellow, and light gray silt loam

Lower part of subsoil:
29 to 42 inches—brownish yellow and light yellowish brown silty clay loam

Substratum:
42 to 60 inches—light gray, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe
Water table: Present in December through June (see “Water Features” table)

Contrasting Inclusions

- Cedonia soils
- Hunters soils
- Donavan soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—readily; western larch and lodgepole pine—periodically
Limitation for planting: Steepness of slope

242—Kiehl silt loam, 0 to 8 percent slopes

Composition

Kiehl soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces
Parent material: Volcanic ash and loess over glacial outwash
Slope range: 0 to 8 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 10 inches—light yellowish brown silt loam

Lower part of subsoil:
10 to 21 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
21 to 29 inches—brown extremely gravelly loamy coarse sand

Lower part of substratum:
29 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Karamin soils
- Scrabblers soils
- Wapal soils

- Aits and Apex soils
- Newbell soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by water erosion, steepness of slope, and droughtiness.

243—Kiehl silt loam, 20 to 40 percent slopes

Composition

Kiehl soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Volcanic ash and loess over glacial outwash
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 10 inches—light yellowish brown silt loam

Lower part of subsoil:
10 to 21 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
21 to 29 inches—brown extremely gravelly loamy coarse sand

Lower part of substratum:
29 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Karamin soils
- Scrabblers soils
- Wapal soils
- Aits and Apex soils
- Newbell soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

244—Kiehl silt loam, 40 to 65 percent slopes

Composition

Kiehl soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Volcanic ash and loess over glacial outwash
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 10 inches—light yellowish brown silt loam

Lower part of subsoil:
10 to 21 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
21 to 29 inches—brown extremely gravelly loamy coarse sand

Lower part of substratum:
29 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Karamin soils
- Scrabblers soils
- Wapal soils
- Aits and Apex soils
- Newbell soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitation for planting: Steepness of slope

245—Kiehl silt loam, cool, 0 to 8 percent slopes

Composition

Kiehl soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces
Parent material: Volcanic ash and loess over glacial outwash
Slope range: 0 to 8 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 14 inches—yellowish brown and brownish yellow silt loam

Upper part of substratum:
14 to 23 inches—light yellowish brown gravelly loamy coarse sand

Lower part of substratum:
23 to 60 inches—very pale brown very gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Low

Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Karamin soils
- Scrabblers soils
- Wapal soils
- Aits and Apex soils
- Newbell soils
- Parmenter soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine, western larch, and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and droughtiness.

246—Kiehl silt loam, cool, 20 to 40 percent slopes

Composition

Kiehl soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Volcanic ash and loess over glacial outwash
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 14 inches—yellowish brown and brownish yellow silt loam

Upper part of substratum:
14 to 23 inches—light yellowish brown gravelly loamy coarse sand

Lower part of substratum:
23 to 60 inches—very pale brown very gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Karamin soils
- Scrabblers soils
- Wapal soils
- Aits and Apex soils
- Newbell soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and

grand fir—readily; ponderosa pine, western larch, and lodgepole pine—periodically
Limitations for planting: None

247—Kiehl silt loam, cool, 40 to 65 percent slopes

Composition

Kiehl soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Volcanic ash and loess over glacial outwash
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—brown silt loam

Subsoil:
3 to 14 inches—yellowish brown and brownish yellow silt loam

Upper part of substratum:
14 to 23 inches—light yellowish brown gravelly loamy coarse sand

Lower part of substratum:
23 to 60 inches—very pale brown very gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Karamin soils
- Scrabblers soils
- Wapal soils
- Aits and Apex soils
- Newbell soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine, western larch, and lodgepole pine—periodically
Limitation for planting: Steepness of slope

248—Koepke loam, 15 to 30 percent slopes

Composition

Koepke soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Volcanic ash and loess over glacial till
Slope range: 15 to 30 percent
Elevation: 2,200 to 4,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 22 inches—dark grayish brown and dark brown loam

Subsoil:
22 to 40 inches—brown gravelly sandy loam

Substratum:
40 to 60 inches—yellowish brown dense glacial till that crushes to very cobbly sandy loam

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to dense glacial till)

Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Louploup soils
- Nevine soils
- Mineral soils
- Scoap soils
- Barnellcreek soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for crops, it is limited by steepness of slope, water erosion, and rooting depth.

249—Lakesol silt loam, 30 to 65 percent north slopes

Composition

Lakesol soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: North-facing terrace escarpments
Parent material: Glacial lake sediment mixed with a component of loess and volcanic ash in the upper part
Slope range: 30 to 65 percent
Elevation: 1,400 to 2,200 feet
Average annual precipitation: 18 to 20 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 10 inches—dark grayish brown and brown silt loam

Subsoil:
10 to 37 inches—pale brown and light yellowish brown silt loam

Substratum:
37 to 60 inches—light gray silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Cedonia soils
- Scala soils
- Hodgson and Kewach soils
- Spens soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and use results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine—periodically
Limitation for planting: Steepness of slope

250—Lithic Xerorthents-Baldknob-Rock outcrop complex, 8 to 40 percent slopes

Composition

Lithic Xerorthents and similar soils: 40 percent
Baldknob soil and similar soils: 30 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Summits and shoulders of glacially scoured hills and mountains
Parent material: Colluvium and residuum derived from rhyodacite and quartz latite mixed with glacial till, volcanic ash, and loess
Slope range: 8 to 40 percent
Elevation: 2,500 to 4,200 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Lithic Xerorthents—stones cover 0 to 10 percent; Baldknob—stones cover 3 to 15 percent

Lithic Xerorthents

Reference profile

Surface layer:
0 to 2 inches—yellowish brown gravelly loam

Subsoil:
2 to 7 inches—yellowish brown gravelly loam

Bedrock:
7 to 11 inches—rhyodacite

Soil properties and qualities

Depth class: Very shallow (4 to 10 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 4 to 10 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Baldknob Soil

Typical profile

Surface layer:
0 to 4 inches—brown very stony loam

Upper part of subsoil:
4 to 9 inches—brown very gravelly loam

Lower part of subsoil:
9 to 14 inches—yellowish brown extremely gravelly loam

Bedrock:
14 to 18 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Thout soils
- Inkler and Nevine soils
- Rubble land

Major Uses

Livestock grazing, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soils in this unit are too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

251—Lithic Xerorthents-Baldknob-Rock outcrop complex, 40 to 70 percent slopes

Composition

Lithic Xerorthents and similar soils: 40 percent
Baldknob soil and similar soils: 25 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of glacially scoured hills and mountains
Parent material: Colluvium derived from rhyodacite

and quartz latite mixed with volcanic ash and loess
Slope range: 40 to 70 percent
Elevation: 2,500 to 4,200 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Lithic Xerorthents—stones cover 0 to 10 percent; Baldknob—stones cover 3 to 15 percent

Lithic Xerorthents

Reference profile

Surface layer:
0 to 2 inches—yellowish brown gravelly loam

Subsoil:
2 to 7 inches—yellowish brown gravelly loam

Bedrock:
7 to 11 inches—rhyodacite

Soil properties and qualities

Depth class: Very shallow (4 to 10 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 4 to 10 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Baldknob Soil

Typical profile

Surface layer:
0 to 4 inches—brown very stony loam

Upper part of subsoil:
4 to 9 inches—brown very gravelly loam

Lower part of subsoil:
9 to 14 inches—yellowish brown extremely gravelly loam

Bedrock:
14 to 18 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Thout soils
- Nevine and Inkler soils and Xerochrepts
- Rubble land

Major Uses

Livestock grazing, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soils in this unit are too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

252—Logy very stony sandy loam, 3 to 25 percent slopes

Composition

Logy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans
Parent material: Alluvium
Slope range: 3 to 25 percent
Elevation: 800 to 1,600 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Surface layer:
0 to 10 inches—grayish brown very stony sandy loam

Subsoil:
10 to 24 inches—brown very gravelly sandy loam

Substratum:
24 to 60 inches—brown very gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Skaha soils
- Heytou and Peshastin soils
- Cashmere, Cashmont, Malott, and Farrell soils

Major Uses

Livestock grazing, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and droughtiness.

253—Loony loam, 0 to 15 percent slopes

Composition

Loony soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Till plains and toeslopes of mountains
Parent material: Volcanic ash over dense glacial till
Slope range: 0 to 15 percent
Elevation: 2,500 to 4,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—light brownish gray loam

Subsoil:
3 to 17 inches—pale brown and light yellowish brown loam

Substratum:
17 to 28 inches—light gray cobbly sandy loam
28 to 60 inches—white and light gray dense glacial till that crushes to sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Moderately well drained
Permeability: Moderate over slow
Available water capacity: Moderate
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through May (see “Water Features” table)

Contrasting Inclusions

- Scrabblers and Torboy soils
- Soils that have a stony surface
- Nevine and Stepstone soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Lodgepole pine—readily; western larch and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, water erosion, and rooting depth.

254—Lostcreek loam, 3 to 15 percent slopes

Composition

Lostcreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans, terraces, and toeslopes of hills and mountains
Parent material: Alluvium and glacial till mixed with a component of loess and volcanic ash
Slope range: 3 to 15 percent
Elevation: 2,000 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Surface layer:
0 to 11 inches—grayish brown loam

Subsoil:
11 to 27 inches—light brownish gray loam

Upper part of substratum:
27 to 42 inches—pale brown fine sandy loam

Lower part of substratum:
42 to 60 inches—mottled, light gray fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through June (see “Water Features” table)

Contrasting Inclusions

- Republic soils
- Apex soils
- Scoap soils
- Donavan and Stevens soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

255—Louiecreek gravelly loam, 3 to 20 percent slopes

Composition

Louiecreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Colluvium derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 3 to 20 percent
Elevation: 1,600 to 3,800 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 13 inches—dark brown gravelly loam

Upper part of subsoil:
13 to 20 inches—pale brown gravelly loam

Lower part of subsoil:
20 to 32 inches—pale brown very gravelly sandy loam

Substratum:
32 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Donavan soils
- Inkler and similar soils
- Soils that have a very stony surface
- Northstar soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

256—Louploup silt loam, 0 to 20 percent slopes

Composition

Louploup soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Till plains, and footslopes and toeslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 0 to 20 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 22 inches—pale brown silt loam

Upper part of substratum:
22 to 46 inches—light gray sandy loam

Lower part of substratum:
46 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 40 to 60 inches
Runoff: Slow to rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Nevine soils
- Stepstone soils
- Scrabblers soils
- Stapaloop and Torboy soils
- Republic soils
- Soils that have a stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

257—Louploup silt loam, 20 to 40 percent slopes

Composition

Louploup soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 22 inches—pale brown silt loam

Upper part of substratum:
22 to 46 inches—light gray sandy loam

Lower part of substratum:
46 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 40 to 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Nevine soils
- Stepstone soils
- Scrabblers soils
- Stapaloop and Torboy soils
- Republic soils
- Soils that have a stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

258—Lynxcreek silt loam, 20 to 40 percent slopes

Composition

Lynxcreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces in narrow mountain valleys
Parent material: Glacial lake sediment with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 20 to 40 percent
Elevation: 3,300 to 4,200 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 9 inches—light yellowish brown silt loam

Subsurface layer:
9 to 10 inches—very pale brown silt loam

Subsoil:
10 to 36 inches—light gray and very pale brown silty clay loam

Substratum:
36 to 60 inches—light gray silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe
Water table: Present in February through May (see "Water Features" table)

Contrasting Inclusions

- Manley soils
- Cryofluvents
- Soils that have more clay in the subsoil
- Soils that are somewhat poorly drained

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir and Engelmann spruce—readily; Douglas-fir and western larch—periodically
Limitations for planting: None

259—Malott very fine sandy loam, 0 to 5 percent slopes

Composition

Malott soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Till plains and summits of hills
Parent material: Loess over glacial till
Slope range: 0 to 5 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown and brown very fine sandy loam

Upper part of subsoil:
12 to 36 inches—yellowish brown very fine sandy loam

Lower part of subsoil:
36 to 49 inches—pale brown, calcareous gravelly sandy loam

Substratum:
49 to 60 inches—white hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Aeneas soils
- Pogue soils
- Peshastin soils
- Emdent soils

Major Uses

Nonirrigated cropland, livestock grazing, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

260—Malott very fine sandy loam, 5 to 10 percent slopes

Composition

Malott soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Till plains and toeslopes of hills
Parent material: Loess over glacial till
Slope range: 5 to 10 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown and brown very fine sandy loam

Upper part of subsoil:
12 to 36 inches—yellowish brown very fine sandy loam

Middle part of subsoil:
36 to 49 inches—pale brown, calcareous gravelly sandy loam

Substratum:
49 to 60 inches—white hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Aeneas soils
- Pogue soils
- Peshastin soils
- Emdent soils

Major Uses

Nonirrigated cropland, livestock grazing, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by water and wind erosion and steepness of slope.

261—Malott very fine sandy loam, 10 to 25 percent slopes

Composition

Malott soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and footslopes of hills
Parent material: Loess over glacial till
Slope range: 10 to 25 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown and brown very fine sandy loam

Upper part of subsoil:
12 to 36 inches—yellowish brown very fine sandy loam

Lower part of subsoil:
36 to 49 inches—pale brown, calcareous gravelly sandy loam

Substratum:
49 to 60 inches—white hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony or bouldery surface
- Peshastin soils
- Couleedam and Soaplake soils
- Aeneas soils
- Pogue soils

Major Uses

Livestock grazing, nonirrigated cropland, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by wind and water erosion and steepness of slope.

262—Malott stony very fine sandy loam, 3 to 25 percent slopes

Composition

Malott soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Summits, footslopes, and toeslopes of hills
Parent material: Loess over glacial till
Slope range: 3 to 25 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 6 inches—gray stony very fine sandy loam

Lower part of surface layer:
6 to 11 inches—grayish brown very fine sandy loam

Upper part of subsoil:
11 to 30 inches—pale brown cobbly fine sandy loam

Lower part of subsoil:
30 to 53 inches—light gray, calcareous gravelly fine sandy loam

Substratum:
53 to 60 inches—light gray hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

• Peshastin soils
• Couleedam and Soaplake soils
• Soils that have a very stony or very bouldery surface
• Aeneas soils
• Pogue soils
• Emdent soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• There are no significant limitations for management of this soil for this use.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and water erosion.

263—Malott stony very fine sandy loam, 25 to 65 percent slopes

Composition

Malott soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and footslopes of hills
Parent material: Loess over glacial till
Slope range: 25 to 65 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 6 inches—gray stony very fine sandy loam

Lower part of surface layer:
6 to 11 inches—grayish brown very fine sandy loam

Upper part of subsoil:
11 to 30 inches—pale brown cobbly fine sandy loam

Lower part of subsoil:
30 to 53 inches—light gray, calcareous gravelly fine sandy loam

Substratum:
53 to 60 inches—light gray hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Peshastin soils
- Couleedam and Soaplake soils
- Soils that have a very stony or very bouldery surface
- Aeneas soils
- Pogue soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

264—Malott-Rock outcrop complex, 3 to 25 percent slopes

Composition

Malott soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Summits and footslopes of hills
Parent material: Loess over glacial till
Slope range: 3 to 25 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Malott—stones cover 0.1 to 3.0 percent

Malott Soil

Typical profile

Upper part of surface layer:
0 to 6 inches—gray stony very fine sandy loam

Lower part of surface layer:
6 to 11 inches—grayish brown very fine sandy loam

Upper part of subsoil:
11 to 30 inches—pale brown cobbly fine sandy loam

Lower part of subsoil:
30 to 53 inches—light gray, calcareous gravelly fine sandy loam

Substratum:
53 to 60 inches—light gray hardpan

Soil properties and qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Peshastin soils
- Couleedam and Soaplake soils
- Soils that have a very stony or very bouldery surface
- Aeneas soils
- Pogue soils
- Emdent soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- There are no significant limitations for management of this unit for this use.

265—Malott-Rock outcrop complex, 25 to 65 percent slopes

Composition

Malott soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of hills
Parent material: Loess over glacial till
Slope range: 25 to 65 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Malott—stones cover 0.1 to 3.0 percent

Malott Soil

Typical profile

Upper part of surface layer:
0 to 6 inches—gray stony very fine sandy loam

Lower part of surface layer:
6 to 11 inches—grayish brown very fine sandy loam

Upper part of subsoil:
11 to 30 inches—pale brown cobbly fine sandy loam

Lower part of subsoil:
30 to 53 inches—light gray, calcareous gravelly fine sandy loam

Substratum:
53 to 60 inches—light gray hardpan

Soil properties and qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Peshastin soils
- Couleedam and Soaplake soils
- Soils that have a very stony or very bouldery surface
- Aeneas soils
- Pogue soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

266—Malott-Torriorthents complex, 25 to 70 percent slopes

Composition

Malott soil and similar soils: 45 percent
Torriorthents and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Malott—backslopes and shoulders of highly dissected hills; Torriorthents—backslopes of highly dissected, eroded hills
Parent material: Malott—loess over glacial till; Torriorthents—glacial till mixed with a small amount of loess in the upper part
Slope range: 25 to 70 percent
Elevation: 1,000 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Malott

Upper part of surface layer:
0 to 6 inches—gray stony very fine sandy loam

Lower part of surface layer:
6 to 11 inches—grayish brown very fine sandy loam

Upper part of subsoil:
11 to 30 inches—pale brown cobbly fine sandy loam

Lower part of subsoil:
30 to 53 inches—light gray, calcareous gravelly fine sandy loam

Substratum:
53 to 60 inches—light gray hardpan

Reference Profile

Torriorthents

Surface layer:
0 to 6 inches—light gray, calcareous stony loam

Substratum:
6 to 60 inches—light gray, calcareous very cobbly fine sandy loam

Soil Properties and Qualities

Depth class: Malott—deep (40 to 60 inches to a hardpan); Torriorthents—deep and very deep (40 to 60 inches or more to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Malott—moderately high; Torriorthents—moderate
Potential rooting depth: Malott—40 to 60 inches; Torriorthents—40 to 60 inches or more
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Malott—moderate; Torriorthents—slight

Contrasting Inclusions

- Rock outcrop
- Couleedam soils
- Heytou and Peshastin soils
- Soils that have an extremely gravelly sand substratum

Major Uses

Livestock grazing, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, and normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

267—Manley silt loam, dry, 5 to 20 percent slopes

Composition

Manley soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and toeslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 5 to 20 percent
Elevation: 3,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 38 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 1 inch—pale brown silt loam

Upper part of subsoil:
1 inch to 12 inches—light yellowish brown silt loam

Middle part of subsoil:
12 to 17 inches—light yellowish brown silt loam

Lower part of subsoil:
17 to 38 inches—light gray very gravelly sandy loam and very pale brown extremely gravelly coarse sandy loam

Substratum:
38 to 60 inches—light gray dense glacial till that crushes to very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Resner and Sitdown soils
- Buhrig and Moses soils
- Andic Cryaquepts
- Soils that have a very stony or bouldery surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and subalpine fir—readily; Engelmann spruce—periodically
Limitations for planting: None

268—Manley silt loam, dry, 20 to 40 percent slopes

Composition

Manley soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 20 to 40 percent
Elevation: 3,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 38 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 1 inch—pale brown silt loam

Upper part of subsoil:
1 inch to 12 inches—light yellowish brown silt loam

Middle part of subsoil:
12 to 17 inches—light yellowish brown silt loam

Lower part of subsoil:
17 to 38 inches—light gray very gravelly sandy loam and very pale brown extremely gravelly coarse sandy loam

Substratum:
38 to 60 inches—light gray dense glacial till that crushes to very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Resner and Sitdown soils
- Buhrig and Moses soils
- Soils that have a very stony or bouldery surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and subalpine fir—readily; Engelmann spruce—periodically
Limitations for planting: None

269—Manley silt loam, dry, 40 to 65 percent slopes

Composition

Manley soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 40 to 65 percent
Elevation: 3,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 38 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 1 inch—pale brown silt loam

Upper part of subsoil:
1 inch to 12 inches—light yellowish brown silt loam

Middle part of subsoil:
12 to 17 inches—light yellowish brown silt loam

Lower part of subsoil:
17 to 38 inches—light gray very gravelly sandy loam and very pale brown extremely gravelly coarse sandy loam

Substratum:
38 to 60 inches—light gray dense glacial till that crushes to very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Resner and Sitdown soils
- Buhrig and Moses soils
- Soils that have a very stony or bouldery surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and subalpine fir—readily; Engelmann spruce—periodically
Limitation for planting: Steepness of slope

270—Manley, dry-Codylake complex, 20 to 40 percent slopes

Composition

Manley soil and similar soils: 55 percent
Codylake soil and similar soils: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Manley—volcanic ash over glacial till; Codylake—volcanic ash over residuum and colluvium derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 3,800 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 38 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Manley

Organic mat on surface: 3 inches thick

Surface layer:
0 to 1 inch—pale brown silt loam

Upper part of subsoil:
1 inch to 12 inches—light yellowish brown silt loam

Middle part of subsoil:
12 to 17 inches—light yellowish brown silt loam

Lower part of subsoil:
17 to 38 inches—light gray very gravelly sandy loam and very pale brown extremely gravelly coarse sandy loam

Substratum:
38 to 60 inches—light gray dense glacial till that crushes to very gravelly loamy coarse sand

Codylake

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—yellowish brown loam

Upper part of subsoil:
5 to 13 inches—yellowish brown loam

Lower part of subsoil:
13 to 24 inches—light yellowish brown gravelly fine sandy loam

Substratum:
24 to 43 inches—light yellowish brown gravelly sandy loam

Bedrock:
43 to 53 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Manley—moderately deep (20 to 40 inches to dense glacial till); Codylake—deep (40 to 60 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Manley—moderate over slow; Codylake—moderate
Available water capacity: Moderately high

Effective rooting depth: Manley—20 to 40 inches; Codylake—40 to 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Resner and Sitdown soils
- Buhrig and Moses soils
- Soils that have a very stony or bouldery surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and subalpine fir—readily; Engelmann spruce—periodically
Limitations for planting: None

271—Manley, dry-Rock outcrop complex, 20 to 40 percent slopes

Composition

Manley soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 20 to 40 percent
Elevation: 3,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 38 to 41 degrees F
Frost-free period: 80 to 100 days

Manley Soil

Typical profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 1 inch—pale brown silt loam

Upper part of subsoil:
1 inch to 12 inches—light yellowish brown silt loam

Middle part of subsoil:
12 to 17 inches—light yellowish brown silt loam

Lower part of subsoil:
17 to 38 inches—light gray very gravelly sandy loam and very pale brown extremely gravelly coarse sandy loam

Substratum:
38 to 60 inches—light gray dense glacial till that crushes to very gravelly loamy coarse sand

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Granitic rock, diorite, and gneiss

Contrasting Inclusions

- Resner and Sitdown soils
- Buhrig and Moses soils
- Soils that have a very stony or bouldery surface layer

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and subalpine fir—readily; Engelmann spruce—periodically
Limitation for planting: Rock outcrop

272—Manley, dry-Rock outcrop complex, 40 to 65 percent slopes

Composition

Manley soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 40 to 65 percent
Elevation: 3,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 38 to 41 degrees F
Frost-free period: 80 to 100 days

Manley Soil

Typical profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 1 inch—pale brown silt loam

Upper part of subsoil:
1 inch to 12 inches—light yellowish brown silt loam

Middle part of subsoil:
12 to 17 inches—light yellowish brown silt loam

Lower part of subsoil:
17 to 38 inches—light gray very gravelly sandy loam and very pale brown extremely gravelly coarse sandy loam

Substratum:
38 to 60 inches—light gray dense glacial till that crushes to very gravelly loamy coarse sand

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Granitic rock, diorite, and gneiss

Contrasting Inclusions

- Resner and Sitdown soils
- Buhrig and Moses soils
- Soils that have a very stony or bouldery surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and subalpine fir—readily; Engelmann spruce—periodically
Limitations for planting: Rock outcrop and steepness of slope

273—Martella silt loam, 0 to 8 percent slopes

Composition

Martella soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Volcanic ash over glacial lake sediment
Slope range: 0 to 8 percent
Elevation: 2,000 to 3,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 3 inches—light yellowish brown silt loam

Upper part of subsoil:
3 to 12 inches—light yellowish brown silt loam

Subsurface layer:
12 to 23 inches—light yellowish brown and yellowish brown silt loam

Lower part of subsoil:
23 to 46 inches—brown and pale brown silt loam

Substratum:
46 to 60 inches—pale olive silty clay loam and silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through June (see "Water Features" table)

Contrasting Inclusions

- Aits soils
- Scrabblers soils
- Kiehl soils
- Kewach soils

Major Uses

Timber production, nonirrigated hay and pasture, building site development, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, grand fir, and ponderosa pine—readily; western larch and western redcedar—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and water erosion.

274—Martella silt loam, dry, 0 to 8 percent slopes

Composition

Martella soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Volcanic ash and loess over glacial lake sediment
Slope range: 0 to 8 percent
Elevation: 2,000 to 3,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 10 inches—pale brown silt loam

Lower part of subsoil:
10 to 46 inches—light gray silt loam

Substratum:
46 to 60 inches—light gray silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through June (see "Water Features" table)

Contrasting Inclusions

- Loony and Louploup soils
- Tunkcreek soils
- Nevine soils
- Karamin soils
- Stapaloop soils
- Kewach soils
- Jimcreek soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, ponderosa pine, and lodgepole pine—readily
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and water erosion.

275—Martella silt loam, dry, 8 to 30 percent slopes

Composition

Martella soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Volcanic ash and loess over glacial lake sediment
Slope range: 8 to 30 percent
Elevation: 2,000 to 3,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 2 inches—brown silt loam

Upper part of subsoil:
2 to 10 inches—pale brown silt loam

Lower part of subsoil:
10 to 46 inches—light gray silt loam

Substratum:
46 to 60 inches—light gray silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate to very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through June (see “Water Features” table)

Contrasting Inclusions

- Loony and Louploup soils
- Nevine soils
- Karamin soils
- Stapaloop soils
- Kewach soils

Major Use

Wildlife habitat and timber production

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, ponderosa pine, and lodgepole pine—readily
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and water erosion.

276—Medisaprists, 0 to 2 percent slopes

Composition

Medisaprists and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backswamps of flood plains, and depressions on till plains, ground moraines, and terraces
Parent material: Decomposed organic material that overlies alluvium, glacial outwash, or glacial lake sediment in some places
Slope range: 0 to 2 percent
Elevation: 1,700 to 2,800 feet
Average annual precipitation: 12 to 18 inches

Average annual air temperature: 45 to 49 degrees F
Frost-free period: 100 to 150 days

Reference Profile

Organic mat on surface: 2 inches thick

Surface tier:
0 to 10 inches—dark gray muck

Subsurface tier:
10 to 36 inches—dark gray muck

Bottom tier:
36 to 60 inches—gray muck

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—none
Water table: Present in January through December (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through April

Contrasting Inclusions

- Aquic Xerofluvents
- Ralsen soils
- Emdent soils
- Poween soils
- Histosols

Major Uses

Wetland wildlife habitat, timber production, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable only during the very short periods when the soil is dry or frozen; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen, thinleaf alder, and paper birch—periodically
Limitation for planting: Prolonged seasonal high water table

277—Merkel sandy loam, 5 to 20 percent slopes

Composition

Merkel soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Toeslopes and footslopes of hills and mountains
Parent material: Loess and volcanic ash over granitic glacial till
Slope range: 5 to 20 percent
Elevation: 2,600 to 5,200 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—brown sandy loam

Subsoil:
6 to 29 inches—yellowish brown gravelly sandy loam

Upper part of substratum:
29 to 35 inches—light yellowish brown very gravelly sandy loam

Lower part of substratum:
35 to 60 inches—pale brown dense glacial till that crushes to very gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderate
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Nevine and Stepstone soils
- Stapaloop and Louploup soils
- Wapal soils
- Barnellcreek soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, nonirrigated hay and pasture, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, wind and water erosion, and rooting depth.

278—Merkel sandy loam, 20 to 40 percent slopes

Composition

Merkel soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Loess and volcanic ash over granitic glacial till
Slope range: 20 to 40 percent
Elevation: 2,600 to 5,200 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—brown sandy loam

Subsoil:
6 to 29 inches—yellowish brown gravelly sandy loam

Upper part of substratum:
29 to 35 inches—light yellowish brown very gravelly sandy loam

Lower part of substratum:
35 to 60 inches—pale brown dense glacial till that crushes to very gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderate
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Nevine and Stepstone soils
- Wapal soils
- Torboy soils
- Stapaloop and Louploup soils
- Mineral soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: None

279—Merkel sandy loam, 40 to 65 percent slopes

Composition

Merkel soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Loess and volcanic ash over granitic glacial till
Slope range: 40 to 65 percent
Elevation: 2,600 to 5,200 feet

Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—brown sandy loam

Subsoil:
6 to 29 inches—yellowish brown gravelly sandy loam

Upper part of substratum:
29 to 35 inches—light yellowish brown very gravelly sandy loam

Lower part of substratum:
35 to 60 inches—pale brown dense glacial till that crushes to very gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderate
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: None

Contrasting Inclusions

- Nevine and Stepstone soils
- Wapal soils
- Torboy soils
- Stapaloop and Louploup soils
- Mineral soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, wildlife habitat, livestock grazing, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Steepness of slope

280—Merkel bouldery fine sandy loam, 5 to 20 percent slopes

Composition

Merkel soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and summits of hills and mountains
Parent material: Loess and volcanic ash over granitic glacial till
Slope range: 5 to 20 percent
Elevation: 2,600 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Stones and boulders cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—light brownish gray bouldery fine sandy loam

Subsoil:
3 to 21 inches—pale brown gravelly fine sandy loam

Upper part of substratum:
21 to 29 inches—light yellowish brown very gravelly sandy loam

Lower part of substratum:
29 to 60 inches—pale brown dense glacial till that crushes to very cobbly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderate
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Torboy soils
- Louploup and Stapaloop soils
- Nevine soils
- Mineral soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by large stones, steepness of slope, water erosion, droughtiness, and rooting depth.

281—Merkel bouldery fine sandy loam, 20 to 40 percent slopes

Composition

Merkel soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Loess and volcanic ash over granitic glacial till
Slope range: 20 to 40 percent
Elevation: 2,600 to 5,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Stones and boulders cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—light brownish gray bouldery fine sandy loam

Subsoil:
3 to 21 inches—pale brown gravelly fine sandy loam

Upper part of substratum:
21 to 29 inches—light yellowish brown very gravelly sandy loam

Lower part of substratum:
29 to 60 inches—pale brown dense glacial till that crushes to very cobbly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Moderate
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Torboy soils
- Nevine and Stepstone soils
- Mineral soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: None

282—Mineral stony loam, 20 to 40 percent slopes

Composition

Mineral soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of mountains

Parent material: Colluvium and glacial till derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 2,300 to 5,300 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—grayish brown stony loam

Subsoil:
6 to 12 inches—pale brown very gravelly loam

Substratum:
12 to 23 inches—very pale brown very stony sandy loam

Bedrock:
23 to 27 inches—granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Pole soils
- Dinkelman and Bearspring soils
- Centralpeak soils
- Capoose soils
- Soils that have a very stony surface
- Spokane, Vanbrunt, and Skanid soils
- Buhrig and Moses soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

283—Mineral stony loam, 40 to 65 percent slopes

Composition

Mineral soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Colluvium and glacial till derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 40 to 65 percent
Elevation: 2,300 to 5,300 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—grayish brown stony loam

Subsoil:
6 to 12 inches—pale brown very gravelly loam

Substratum:
12 to 23 inches—very pale brown very stony sandy loam

Bedrock:
23 to 27 inches—granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low

Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Pole soils
- Dinkelman and Bearspring soils
- Centralpeak soils
- Capoose soils
- Soils that have a very stony surface
- Spokane, Vanbrunt, and Skanid soils
- Buhrig and Moses soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

284—Mineral-Rock outcrop complex, 5 to 20 percent slopes

Composition

Mineral soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and ridges of mountains
Parent material: Colluvium and glacial till derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 5 to 20 percent
Elevation: 2,300 to 5,300 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days
Rock fragments on surface: Mineral—stones cover 0.1 to 3.0 percent

Mineral Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—grayish brown stony loam

Subsoil:
6 to 12 inches—pale brown very gravelly loam

Substratum:
12 to 23 inches—very pale brown very stony sandy loam

Bedrock:
23 to 27 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Chumstick soils
- Dinkelman and Bearspring soils
- Centralpeak soils
- Capoose soils
- Soils that have a very stony surface
- Spokane, Vanbrunt, and Skanid soils
- Buhrig and Moses soils

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and

tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

285—Mineral-Rock outcrop complex, 20 to 40 percent slopes

Composition

Mineral soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of mountains
Parent material: Colluvium and glacial till derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 2,300 to 5,300 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days
Rock fragments on surface: Mineral—stones cover 0.1 to 3.0 percent

Mineral Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—grayish brown stony loam

Subsoil:
6 to 12 inches—pale brown very gravelly loam

Substratum:
12 to 23 inches—very pale brown very stony sandy loam

Bedrock:
23 to 27 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Chumstick soils
- Dinkelman and Bearspring soils
- Centralpeak soils
- Capoose soils
- Soils that have a very stony surface
- Spokane, Vanbrunt, and Skanid soils
- Buhrig and Moses soils

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

286—Mineral-Rock outcrop complex, 40 to 65 percent slopes

Composition

Mineral soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Colluvium and glacial till derived from granitic rock with a component of loess and volcanic ash in the upper part
Slope range: 40 to 65 percent
Elevation: 2,300 to 5,300 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days
Rock fragments on surface: Mineral—stones cover 0.1 to 3.0 percent

Mineral Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—grayish brown stony loam

Subsoil:
6 to 12 inches—pale brown very gravelly loam

Substratum:
12 to 23 inches—very pale brown very stony sandy loam

Bedrock:
23 to 27 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Chumstick soils
- Dinkelman and Bearspring soils
- Centralpeak soils
- Capoose soils
- Soils that have a very stony surface
- Spokane, Vanbrunt, and Skanid soils
- Buhrig and Moses soils
- Rubble land

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

287—Mineral-Rock outcrop complex, 40 to 65 percent north slopes

Composition

Mineral soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: North-facing backslopes of mountains
Parent material: Colluvium and glacial till derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,700 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days
Rock fragments on surface: Mineral—stones cover 0.1 to 3.0 percent

Mineral Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—grayish brown stony loam

Subsoil:
8 to 12 inches—pale brown very gravelly loam

Substratum:
12 to 23 inches—yellowish brown and light yellowish brown very cobbly sandy loam

Bedrock:
23 to 27 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through

March; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Chumstick soils
- Dinkelman and Bearspring soils
- Centralpeak soils
- Capoose soils
- Soils that have a very stony surface
- Buhrig and Moses soils
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

288—Mitchellpoint silt loam, 0 to 5 percent slopes

Composition

Mitchellpoint soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces
Parent material: Volcanic ash and loess over glaciofluvial deposits underlain by glacial outwash
Slope range: 0 to 5 percent
Elevation: 1,800 to 2,100 feet
Average annual precipitation: 17 to 19 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 7 inches—brown silt loam

Upper part of subsoil:
7 to 14 inches—light yellowish brown silt loam

Middle part of subsoil:
14 to 20 inches—light yellowish brown silt loam

Lower part of subsoil:
20 to 26 inches—very pale brown cobbly silt loam

Upper part of substratum:
26 to 36 inches—multicolored very cobbly loamy coarse sand

Lower part of substratum:
36 to 60 inches—multicolored very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Hallcreek and Garrison soils
- Hunters soils
- Bernhill soils

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by water erosion.

289—Monse silt loam, 0 to 8 percent slopes

Composition

Monse soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Stream terraces
Parent material: Alluvium over glacial lake sediment
Slope range: 0 to 8 percent
Elevation: 750 to 1,400 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 14 inches—grayish brown silt loam

Upper part of subsoil:
14 to 19 inches—light brownish gray silt loam

Middle part of subsoil:
19 to 40 inches—mottled, light gray and light brownish gray silty clay loam and silt loam

Lower part of subsoil:
40 to 45 inches—mottled, light gray, calcareous silt loam

Substratum:
45 to 60 inches—mottled, very pale brown, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through July (see “Water Features” table)

Contrasting Inclusions

- Aeneas soils
- Pogue soils
- Cashmere and Cashmont soils
- Okanogan soils

Major Uses

Nonirrigated cropland, nonirrigated hay and pasture, irrigated hay and pasture, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil has a high water table at certain times of the year that limits use of the soil.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and water erosion.

290—Morical silt loam, 8 to 30 percent slopes

Composition

Morical soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Summits and shoulders of foothills
Parent material: Residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 8 to 30 percent
Elevation: 2,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 13 inches—brown silt loam

Subsoil:
13 to 22 inches—yellowish brown loam

Bedrock:
22 to 32 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Tyee soils
- Broadax soils
- Ginnis soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction.
- The soil in this unit is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If the soil in this unit is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

291—Morical silt loam, 30 to 45 percent slopes

Composition

Morical soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of foothills
Parent material: Residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 30 to 45 percent
Elevation: 2,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 13 inches—brown silt loam

Subsoil:
13 to 22 inches—yellowish brown loam

Bedrock:
22 to 32 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Hazard of water erosion: Rangeland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Tyee soils
- Ginnis soils
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, or brush management using ground equipment.
- This unit is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

292—Morical silt loam, 8 to 30 percent north slopes

Composition

Morical soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: North- and east-facing summits and shoulders of foothills
Parent material: Residuum and colluvium derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 8 to 30 percent

Elevation: 2,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 17 inches—grayish brown silt loam

Upper part of subsoil:
17 to 28 inches—light yellowish brown silt loam

Lower part of subsoil:
28 to 33 inches—light yellowish brown gravelly loam

Bedrock:
33 to 43 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Tyee soils
- Broadax soils
- Ginnis soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction.
- This unit is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth.

293—Moscow silt loam, dry, 20 to 40 percent slopes

Composition

Moscow soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders, backslopes, and footslopes of mountains
Parent material: Mantle of volcanic ash and loess over residuum and colluvium derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 3,000 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—brown silt loam

Upper part of subsoil:
3 to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 23 inches—pale brown gravelly sandy loam

Substratum:
23 to 34 inches—very pale brown gravelly sandy loam

Bedrock:
34 to 44 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe

Contrasting Inclusions

- Ohscow soils
- Mineral soils
- Codylake soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch and ponderosa pine—periodically
Limitations for planting: None

294—Moscow silt loam, dry, 40 to 65 percent slopes

Composition

Moscow soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes, backslopes, and shoulders of mountains
Parent material: Mantle of volcanic ash and loess over residuum and colluvium derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 3,000 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—brown silt loam

Upper part of subsoil:
3 to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 23 inches—pale brown gravelly sandy loam

Substratum:
23 to 34 inches—very pale brown gravelly sandy loam

Bedrock:
34 to 44 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Ohscow soils
- Mineral soils
- Codylake soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch and ponderosa pine—periodically
Limitation for planting: Steepness of slope

295—Moses silt loam, 0 to 30 percent slopes

Composition

Moses soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Summits and footslopes of mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from granitic rock
Slope range: 0 to 30 percent
Elevation: 3,500 to 6,000 feet
Average annual precipitation: 25 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 4 inches thick

Surface layer:
0 to 1 inch—light gray silt loam

Upper part of subsoil:
1 inch to 13 inches—yellowish brown and brownish yellow silt loam

Lower part of subsoil:
13 to 20 inches—light yellowish brown very gravelly coarse sandy loam

Substratum:
20 to 34 inches—very pale brown very gravelly coarse sandy loam

Bedrock:
34 to 44 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Manley and Togo soils
- Codylake soils
- Centralpeak soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Lodgepole pine, western larch, and subalpine fir—readily; Douglas-fir and Engelmann spruce—periodically
Limitations for planting: None

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by rooting depth, steepness of slope, water erosion, and droughtiness.

296—Moses silt loam, 30 to 65 percent slopes

Composition

Moses soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from granitic rock
Slope range: 30 to 65 percent
Elevation: 3,500 to 6,000 feet
Average annual precipitation: 25 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—light gray silt loam

Upper part of subsoil:
1 inch to 13 inches—yellowish brown and brownish yellow silt loam

Lower part of subsoil:
13 to 20 inches—light yellowish brown very gravelly coarse sandy loam

Substratum:
20 to 34 inches—very pale brown very gravelly coarse sandy loam

Bedrock:
34 to 44 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Manley and Togo soils
- Codylake soils
- Centralpeak soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Lodgepole pine, western larch, and subalpine fir—readily; Douglas-fir and Engelmann spruce—periodically
Limitation for planting: Steepness of slope

297—Moses extremely bouldery silt loam, 30 to 65 percent slopes

Composition

Moses soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes, backslopes, and shoulders of mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from granitic rock
Slope range: 30 to 65 percent
Elevation: 4,600 to 6,500 feet
Average annual precipitation: 25 to 35 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days
Rock fragments on surface: Boulders and stones cover 15 to 50 percent

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 8 inches—light yellowish brown extremely bouldery silt loam

Subsoil:
8 to 22 inches—pale brown very stony sandy loam

Substratum:
22 to 30 inches—very pale brown very gravelly coarse sandy loam

Bedrock:
30 to 40 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Manley and Togo soils
- Codylake soils
- Centralpeak soils

Major Uses

Wildlife habitat, watershed, timber production, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Lodgepole pine, western larch, and subalpine fir—readily; Douglas-fir and Engelmann spruce—periodically
Limitations for planting: Boulders on and in the soil and steepness of slope

298—Moses extremely bouldery silt loam, cold, 5 to 70 percent slopes

Composition

Moses soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Summits, shoulders, and backslopes of mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from granitic rock
Slope range: 5 to 70 percent
Elevation: 5,400 to 6,800 feet
Average annual precipitation: 25 to 35 inches

Average annual air temperature: 37 to 39 degrees F
Frost-free period: 70 to 90 days
Rock fragments on surface: Boulders and stones cover 15 to 50 percent

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 8 inches—light yellowish brown extremely bouldery silt loam

Subsoil:
8 to 22 inches—pale brown very stony sandy loam

Substratum:
22 to 30 inches—very pale brown very gravelly coarse sandy loam

Bedrock:
30 to 40 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to weathered bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through May; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Soils that have weathered bedrock at a depth of 40 to 60 inches and have fewer rock fragments in the substratum
- Togo and Manley soils
- Rock outcrop

Major Uses

Limited timber production, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Lodgepole pine, subalpine fir, and whitebark pine—periodically
Limitations for planting: Boulders on and in the soil and steepness of slope in some areas

299—Narcisse silt loam, 0 to 3 percent slopes

Composition

Narcisse soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Low stream terraces and flood plains
Parent material: Alluvium
Slope range: 0 to 3 percent
Elevation: 1,700 to 2,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 16 inches—dark grayish brown silt loam

Subsoil:
16 to 25 inches—grayish brown silt loam

Upper part of substratum:
25 to 42 inches—light brownish gray fine sandy loam

Lower part of substratum:
42 to 60 inches—light gray silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through April (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through April

Contrasting Inclusions

- Coxlake soils
- Aquic Xerofluvents

- Bossburg soils
- Ralsen soils

Major Uses

Timber production, nonirrigated hay and pasture, livestock grazing, wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen, paper birch, and thinleaf alder—readily; ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by water erosion and flooding.

300—Narcisse silt loam, dry, 0 to 3 percent slopes

Composition

Narcisse soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Low stream terraces and flood plains
Parent material: Alluvium
Slope range: 0 to 3 percent
Elevation: 1,700 to 2,400 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 10 inches—very dark gray and dark gray silt loam

Lower part of surface layer:
10 to 21 inches—grayish brown silt loam

Subsoil:
21 to 31 inches—light brownish gray silt loam

Upper part of substratum:
31 to 46 inches—grayish brown and light brownish gray sandy loam

Lower part of substratum:
46 to 60 inches—pale brown gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate in the upper 46 inches and very rapid below
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through April (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through April

Contrasting Inclusions

- Coxlake soils
- Ralsen soils
- Bossburg soils
- Aquic Xerofluvents

Major Uses

Nonirrigated hay and pasture, livestock grazing, wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen, paper birch, and thinleaf alder—readily; ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by water erosion and flooding.

301—Nespelem silt loam, 0 to 5 percent slopes

Composition

Nespelem soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces
Parent material: Loess over glacial lake sediment
Slope range: 0 to 5 percent
Elevation: 1,200 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown silt loam

Upper part of subsoil:
12 to 22 inches—brown silt loam
22 to 24 inches—light brownish gray hardpan

Lower part of subsoil:
24 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Slight
Salinity: Slight between depths of 24 and 60 inches

Contrasting Inclusions

- Disautel soils
- Emdent soils
- Soils that do not have a hardpan
- Poween soils
- Haley soils

Major Uses

Livestock grazing, nonirrigated and irrigated hay and pasture, building site development, wildlife habitat, recreation, and watershed

Use and Management

Livestock grazing

- The depth to the hardpan limits pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by rooting depth and water erosion.

302—Nespelem silt loams complex, 5 to 30 percent slopes

Composition

Nespelem soil, north slopes, and similar soils: 50 percent
Nespelem soil, south slopes, and similar soils: 40 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Dissected terraces and terrace escarpments in an area of complex topography with both north- and south-facing slopes
Parent material: Loess over glacial lake sediment
Slope range: 5 to 30 percent
Elevation: 1,200 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Nespelem, north slopes

Surface layer:
0 to 19 inches—grayish brown silt loam

Upper part of subsoil:
19 to 30 inches—brown silt loam
30 to 32 inches—light yellowish brown hardpan

Lower part of subsoil:
32 to 60 inches—pale yellow and light yellowish brown, calcareous silt loam

Nespelem, south slopes

Upper part of surface layer:
0 to 8 inches—dark brown silt loam

Lower part of surface layer:
8 to 16 inches—dark brown very fine sandy loam

Upper part of subsoil:
16 to 36 inches—dark grayish brown very fine sandy loam
36 to 38 inches—grayish brown hardpan

Lower part of subsoil:
38 to 60 inches—grayish brown, calcareous silt loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches

Runoff: Rapid
Hazard of water erosion: Cropland—moderate to very severe; rangeland—slight to severe
Hazard of wind erosion (bare surface): Slight
Salinity: Slight in the lower part of the subsoil

Contrasting Inclusions

- Disautel soils
- Soils that do not have a hardpan
- Haley soils
- Ewall soils
- Picard and Rebecca soils

Major Uses

Livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction.
- This unit is too shallow for pond construction.

Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

303—Nespelem-Emdent silt loams complex, 0 to 15 percent slopes

Composition

Nespelem soil and similar soils: 55 percent
Emdent soil and similar soils: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Nespelem—dissected terraces with swells and swales; Emdent—swales in dissected terraces
Parent material: Nespelem—loess over glacial lake sediment; Emdent—alluvium derived from volcanic ash and loess
Slope range: Nespelem—0 to 15 percent; Emdent—0 to 3 percent
Elevation: 1,200 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Nespelem

Surface layer:
0 to 12 inches—grayish brown silt loam

Upper part of subsoil:
12 to 22 inches—brown silt loam
22 to 24 inches—light brownish gray hardpan

Lower part of subsoil:
24 to 60 inches—light gray, calcareous silt loam

Emdent

Surface layer:
0 to 16 inches—grayish brown, calcareous silt loam

Upper part of subsoil:
16 to 26 inches—light brownish gray, calcareous silt loam

Lower part of subsoil:
26 to 60 inches—light gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Nespelem—moderately deep (20 to 40 inches to a hardpan); Emdent—very deep (more than 60 inches)
Drainage class: Nespelem—well drained; Emdent—somewhat poorly drained
Permeability: Moderate
Available water capacity: Nespelem—moderately high; Emdent—very high
Potential rooting depth: Nespelem—20 to 40 inches; Emdent—more than 60 inches
Runoff: Nespelem—slow; Emdent—ponded for long periods in February through May
Hazard of water erosion (Nespelem): Cropland—slight or moderate; rangeland—slight
Hazard of water erosion (Emdent): Cropland—slight; rangeland—none
Hazard of wind erosion (bare surface): Nespelem—slight; Emdent—moderate
Water table: Present in January through December (see “Water Features” table)
Salinity: Nespelem—slight in the lower part of the subsoil; Emdent—slight in the upper 18 inches and very slight between depths of 18 and 60 inches

Contrasting Inclusions

- Soils that are poorly drained
- Ewall soils
- Poween soils
- Disautel soils
- Narcisse soils

Major Uses

Livestock grazing, nonirrigated hay and pasture, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- The depth to the hardpan in the Nespelem soil limits pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The Emdent soil has a high water table at certain times of the year that limits use of the soil.
- The Emdent soil is affected by salt. If the range is in poor condition, salts concentrate on the bare surface as a result of evaporation. Reseeding is very difficult, and only salt-tolerant species should be used.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth of the Nespelem soil and by wind erosion and wetness in the Emdent soil.

304—Nespelem-Typic Xerorthents, eroded complex, 5 to 20 percent slopes

Composition

Nespelem soil and similar soils: 75 percent
Typic Xerorthents and similar soils: 20 percent
Contrasting inclusions: 5 percent

Setting

Position on landscape: Dissected glacial lake terraces
Parent material: Nespelem—loess over glacial lake sediment; Typic Xerorthents—glacial lake sediment
Slope range: 5 to 20 percent
Elevation: 2,100 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Nespelem

Surface layer:
0 to 12 inches—grayish brown silt loam

Upper part of subsoil:
12 to 22 inches—brown silt loam

22 to 24 inches—light brownish gray hardpan

Lower part of subsoil:
24 to 60 inches—light gray, calcareous silt loam

Reference Profile

Typic Xerorthents

Surface layer:
0 to 9 inches—light gray, calcareous silt loam

Substratum:
9 to 60 inches—light gray and white, calcareous silt loam

Soil Properties and Qualities

Depth class: Nespelem—moderately deep (20 to 40 inches to a hardpan); Typic Xerorthents—very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Nespelem—moderate; Typic Xerorthents—moderately slow
Available water capacity: Nespelem—moderately high; Typic Xerorthents—very high
Potential rooting depth: Nespelem—20 to 40 inches; Typic Xerorthents—more than 60 inches
Runoff: Nespelem—slow or medium; Typic Xerorthents—medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Nespelem—slight; Typic Xerorthents—moderate
Salinity: Nespelem—slight in the lower part of the subsoil; Typic Xerorthents—slight throughout

Contrasting Inclusions

- Disautel soils
- Emdent soils

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- The depth to the hardpan in the Nespelem soil limits pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth.

305—Neuske silt loam, 0 to 20 percent slopes

Composition

Neuske soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ground moraines and footslopes of mountains
Parent material: Glacial till mixed with volcanic ash and loess
Slope range: 0 to 20 percent
Elevation: 1,800 to 3,300 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—grayish brown silt loam

Upper part of subsurface layer:
5 to 24 inches—pale brown silt loam

Lower part of subsurface layer:
24 to 30 inches—light gray loam

Upper part of subsoil:
30 to 39 inches—light brownish gray and light gray loam

Middle part of subsoil:
39 to 50 inches—pale brown and light gray clay loam

Lower part of subsoil:
50 to 60 inches—light gray dense glacial till that crushes to cobbly loam

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Very high
Effective rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Republic soils
- Soils that are very gravelly
- Louploup soils
- Kewach soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir and western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

306—Neuske silt loam, 20 to 40 percent slopes

Composition

Neuske soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Glacial till mixed with volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 1,800 to 3,300 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—grayish brown silt loam

Upper part of subsurface layer:
5 to 24 inches—pale brown silt loam

Lower part of subsurface layer:
24 to 30 inches—light gray loam

Upper part of subsoil:
30 to 39 inches—light brownish gray and light gray loam

Middle part of subsoil:
39 to 50 inches—pale brown and light gray clay loam

Lower part of subsoil:
50 to 60 inches—light gray dense glacial till that crushes to cobbly loam

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Very high
Effective rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Republic soils
- Soils that are very gravelly
- Louploup soils
- Kewach soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir and western larch—periodically
Limitations for planting: None

307—Nevine silt loams association, 5 to 20 percent slopes

Composition

Nevine soil and similar soils: 45 percent
Nevine soil, warm, and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Volcanic ash over glacial till
Slope range: 5 to 20 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Nevine

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 9 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
9 to 18 inches—light yellowish brown loam

Lower part of subsoil:
18 to 28 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
28 to 41 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
41 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Nevine, warm

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 7 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
7 to 15 inches—light yellowish brown loam

Lower part of subsoil:
15 to 25 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
25 to 38 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
38 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Louploup and Apex soils
- Stepstone and Scrabblers soils
- Merkel soils
- Republic soils
- Soils that have a very stony surface
- Manley soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

Irrigated Cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

308—Nevine silt loams association, 20 to 40 percent slopes

Composition

Nevine soil and similar soils: 45 percent
Nevine soil, warm, and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Volcanic ash over glacial till
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Nevine

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 9 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
9 to 18 inches—light yellowish brown loam

Lower part of subsoil:
18 to 28 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
28 to 41 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
41 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Nevine, warm

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 7 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
7 to 15 inches—light yellowish brown loam

Lower part of subsoil:
15 to 25 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
25 to 38 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
38 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe

Contrasting Inclusions

- Mineral soils
- Louploup and Apex soils
- Stepstone and Scrabblers soils
- Merkel soils
- Republic soils
- Soils that have a very stony surface
- Manley soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: None

309—Nevine silt loams association, 40 to 65 percent slopes

Composition

Nevine soil and similar soils: 45 percent
Nevine soil, warm, and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Volcanic ash over glacial till
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Nevine

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 9 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
9 to 18 inches—light yellowish brown loam

Lower part of subsoil:
18 to 28 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
28 to 41 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
41 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Nevine, warm

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 7 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
7 to 15 inches—light yellowish brown loam

Lower part of subsoil:
15 to 25 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
25 to 38 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
38 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Mineral soils
- Louploup and Apex soils
- Stepstone soils
- Merkel soils
- Manley soils
- Soils that have a very stony surface
- Rock outcrop
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitation for planting: Steepness of slope

310—Nevine-Rock outcrop association, 20 to 40 percent slopes

Composition

Nevine soil and similar soils: 30 percent
Nevine soil, warm, and similar soils: 30 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Volcanic ash over glacial till
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Nevine Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 9 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
9 to 18 inches—light yellowish brown loam

Lower part of subsoil:
18 to 28 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
28 to 41 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
41 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Nevine Soil, Warm

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 7 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
7 to 15 inches—light yellowish brown loam

Lower part of subsoil:
15 to 25 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
25 to 38 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
38 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Rhyodacite, quartz latite, granitic rock, and diorite

Contrasting Inclusions

- Mineral and Thout soils
- Baldknob and Chumstick soils
- Louploup and Apex soils
- Stepstone soils
- Merkel soils
- Manley soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitation for planting: Rock outcrop

311—Nevine-Rock outcrop association, 40 to 65 percent slopes

Composition

Nevine soil and similar soils: 30 percent
Nevine soil, warm, and similar soils: 30 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Volcanic ash over glacial till
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Nevine Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 9 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
9 to 18 inches—light yellowish brown loam

Lower part of subsoil:
18 to 28 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
28 to 41 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
41 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow

Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Nevine Soil, Warm

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 1 inch—pale brown and light gray silt loam

Upper part of subsoil:
1 inch to 7 inches—brown and light yellowish brown silt loam

Middle part of subsoil:
7 to 15 inches—light yellowish brown loam

Lower part of subsoil:
15 to 25 inches—light yellowish brown very gravelly sandy loam

Upper part of substratum:
25 to 38 inches—white dense glacial till that crushes to very gravelly sandy loam

Lower part of substratum:
38 to 60 inches—white dense glacial till that crushes to very gravelly loamy sand

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Rock Outcrop

Kind of rock: Rhyodacite, quartz latite, granitic rock, and diorite

Contrasting Inclusions

- Mineral and Thout soils
- Baldknob and Pole soils
- Louploup and Apex soils
- Stepstone soils
- Merkel soils
- Manley soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, ponderosa pine, and western larch—readily
Limitations for planting: Rock outcrop and steepness of slope

312—Newbell silt loam, dry, 5 to 20 percent slopes

Composition

Newbell soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Toeslopes and footslopes of mountains
Parent material: Mantle of volcanic ash and loess over glacial till
Slope range: 5 to 20 percent
Elevation: 2,400 to 4,500 feet
Average annual precipitation: 19 to 24 inches
Average annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 1 inch—dark brown silt loam

Upper part of subsoil:
1 inch to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 21 inches—very pale brown very gravelly loam

Substratum:
21 to 60 inches—very pale brown dense glacial till that crushes to very gravelly loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Inkler and Merkel soils
- Kiehl soils
- Hartill and Mineral soils
- Aits soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and grand fir—readily; ponderosa pine and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

313—Newbell silt loam, dry, 20 to 40 percent slopes

Composition

Newbell soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of mountains
Parent material: Mantle of volcanic ash and loess over glacial till
Slope range: 20 to 40 percent
Elevation: 2,400 to 4,500 feet
Average annual precipitation: 19 to 24 inches
Average annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 1 inch—dark brown silt loam

Upper part of subsoil:
1 inch to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 21 inches—very pale brown very gravelly loam

Substratum:
21 to 60 inches—very pale brown dense glacial till that crushes to very gravelly loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe

Contrasting Inclusions

- Inkler and Merkel soils
- Kiehl soils
- Hartill and Mineral soils
- Aits soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and grand fir—readily; ponderosa pine and lodgepole pine—periodically
Limitations for planting: None

314—Newbell silt loam, dry, 40 to 65 percent slopes

Composition

Newbell soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash and loess over glacial till
Slope range: 40 to 65 percent
Elevation: 2,400 to 4,500 feet
Average annual precipitation: 19 to 24 inches
Average annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 1 inch—dark brown silt loam

Upper part of subsoil:
1 inch to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 21 inches—very pale brown very gravelly loam

Substratum:
21 to 60 inches—very pale brown dense glacial till that crushes to very gravelly loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: Moderately high
Effective rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Inkler and Merkel soils
- Kiehl soils
- Hartill and Mineral soils
- Aits soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and grand fir—readily; ponderosa pine and lodgepole pine—periodically
Limitation for planting: Steepness of slope

315—Northstar gravelly loam, dry, 5 to 30 percent slopes

Composition

Northstar soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes, shoulders, and ridges of hills and mountains
Parent material: Colluvium and residuum derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 10 inches—grayish brown gravelly loam

Subsoil:
10 to 26 inches—brown and light yellowish brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow to rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Johntom soils
- Skanid soils
- Spokane soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and rooting depth.

316—Northstar gravelly loam, dry, 30 to 65 percent slopes

Composition

Northstar soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Colluvium derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 10 inches—grayish brown gravelly loam

Subsoil:
10 to 26 inches—brown and light yellowish brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Johntom soils
- Skanid soils
- Spokane soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Steepness of slope

317—Northstar-Johntom-Rock outcrop complex, 8 to 30 percent slopes

Composition

Northstar soil and similar soils: 50 percent
Johntom soil and similar soils: 20 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Northstar—backslopes, shoulders, and ridges of hills and mountains (fig. 11); Johntom—shoulders and ridges of hills and mountains
Parent material: Colluvium and residuum derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 8 to 30 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Northstar—none; Johntom—stones cover 0.1 to 3.0 percent

Northstar Soil

Typical profile

Organic mat on surface: 1.5 inches thick

Upper part of surface layer:
0 to 2 inches—grayish brown gravelly loam

Lower part of surface layer:
2 to 11 inches—grayish brown very gravelly loam

Subsoil:
11 to 18 inches—pale brown very gravelly loam

Substratum:
18 to 27 inches—pale brown extremely cobbly loam

Bedrock:
27 to 31 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Slight or moderate

Johntom Soil

Typical profile

Upper part of surface layer:
0 to 4 inches—dark brown stony loam

Lower part of surface layer:
4 to 11 inches—brown very gravelly sandy loam

Substratum:
11 to 16 inches—pale brown extremely gravelly coarse sandy loam

Bedrock:
16 to 20 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Slight or moderate

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Soils that have hard bedrock at a depth of 4 to 10 inches
- Louiecreek and Scoap soils
- Donavan soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Northstar—Rock outcrop and rock fragments in the soil; Johntom—depth to bedrock, rock fragments in the soil, and Rock outcrop

Figure 11.—Northstar soil in an area of Northstar-Johntom-Rock outcrop complex, 8 to 30 percent slopes. The ecological site is ponderosa pine/Idaho fescue. The large-leaved herbaceous plant is arrowleaf balsamroot. (Pole height is 1 meter.)

318—Northstar-Johntom-Rock outcrop complex, 30 to 65 percent slopes

Composition

Northstar soil and similar soils: 50 percent
Johntom soil and similar soils: 20 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Northstar—none; Johntom—stones cover 0.1 to 3.0 percent

Northstar Soil

Typical profile

Organic mat on surface: 1.5 inches thick

Upper part of surface layer:
0 to 2 inches—grayish brown gravelly loam

Lower part of surface layer:
2 to 11 inches—grayish brown very gravelly loam

Subsoil:
11 to 18 inches—pale brown very gravelly loam

Substratum:
18 to 27 inches—pale brown extremely cobbly loam

Bedrock:
27 to 31 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Moderate or severe

Johntom Soil

Typical profile

Upper part of surface layer:
0 to 4 inches—dark brown stony loam

Lower part of surface layer:
4 to 11 inches—brown very gravelly sandy loam

Substratum:
11 to 16 inches—pale brown extremely gravelly coarse sandy loam

Bedrock:
16 to 20 inches—rhyodacite

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Moderate or severe

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Soils that have hard bedrock at a depth of 4 to 10 inches
- Louiecreek and Scoap soils
- Donavan soils
- Rubble land

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Northstar—Rock outcrop, rock fragments in the soil, and steepness of slope; Johntom—depth to bedrock, rock fragments in the soil, steepness of slope, and Rock outcrop

319—Northstar-Louiecreek-Rock outcrop complex, 20 to 40 percent slopes

Composition

Northstar soil and similar soils: 40 percent
Louiecreek soil and similar soils: 30 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Upper footslopes and backslopes of hills and mountains
Parent material: Colluvium derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,600 to 3,800 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Northstar Soil

Typical profile

Organic mat on surface: 1.5 inches thick

Upper part of surface layer:
0 to 2 inches—grayish brown gravelly loam

Lower part of surface layer:
2 to 11 inches—grayish brown very gravelly loam

Subsoil:
11 to 18 inches—pale brown very gravelly loam

Substratum:
18 to 27 inches—pale brown extremely cobbly loam

Bedrock:
27 to 31 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Louiecreek Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 13 inches—dark brown gravelly loam

Upper part of subsoil:
13 to 20 inches—pale brown gravelly loam

Lower part of the subsoil:
20 to 32 inches—pale brown very gravelly sandy loam

Substratum:
32 to 60 inches—very pale brown very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Johntom soils
- Donavan soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration (Northstar): Ponderosa pine—periodically
Potential for natural regeneration (Louiecreek): Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Northstar—Rock outcrop and rock fragments in the soil; Louiecreek—Rock outcrop

320—Northstar-Louiecreek-Rock outcrop complex, 40 to 65 percent slopes

Composition

Northstar soil and similar soils: 40 percent
Louiecreek soil and similar soils: 30 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Northstar—backslopes and shoulders of hills and mountains; Louiecreek—backslopes of hills and mountains
Parent material: Colluvium derived from rhyodacite and quartz latite mixed with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,600 to 3,800 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Northstar Soil

Typical profile

Organic mat on surface: 1.5 inches thick

Upper part of surface layer:
0 to 2 inches—grayish brown gravelly loam

Lower part of surface layer:
2 to 11 inches—grayish brown very gravelly loam

Subsoil:
11 to 18 inches—pale brown very gravelly loam

Substratum:
18 to 27 inches—pale brown extremely cobbly loam

Bedrock:
27 to 31 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Louiecreek Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 13 inches—dark brown gravelly loam

Upper part of subsoil:
13 to 20 inches—pale brown gravelly loam

Lower part of subsoil:
20 to 32 inches—pale brown very gravelly sandy loam

Substratum:
32 to 60 inches—very pale brown very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Johntom soils
- Donavan soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration (Northstar): Ponderosa pine—periodically
Potential for natural regeneration (Louiecreek): Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Northstar—Rock outcrop, rock fragments in the soil, and steepness of slope; Louiecreek—Rock outcrop and steepness of slope

321—Northstar-Rock outcrop complex, 5 to 30 percent slopes

Composition

Northstar soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes, shoulders, and ridges of hills and mountains
Parent material: Colluvium and residuum derived from rhyodacite and quartz latite mixed loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Northstar Soil

Typical profile

Organic mat on surface: 1.5 inches thick

Upper part of surface layer:
0 to 2 inches—grayish brown gravelly loam

Lower part of surface layer:
2 to 11 inches—grayish brown very gravelly loam

Subsoil:
11 to 18 inches—pale brown very gravelly loam

Substratum:
18 to 27 inches—pale brown extremely cobbly loam

Bedrock:
27 to 31 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Johntom soils
- Louiecreek soils
- Donavan soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

322—Ohscow silt loam, 20 to 40 percent slopes

Composition

Ohscow soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of mountains
Parent material: Mantle of volcanic ash and loess over colluvium and residuum derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 2,200 to 5,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—brown silt loam

Upper part of subsoil:
4 to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 27 inches—light gray very gravelly sandy loam

Upper part of substratum:
27 to 46 inches—light gray very cobbly sandy loam

Lower part of substratum:
46 to 60 inches—light gray very cobbly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe

Contrasting Inclusions

- Centralpeak, Mineral, and Oxerine soils
- Canteen soils
- Bearspring soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

323—Ohscow silt loam, 40 to 65 percent slopes

Composition

Ohscow soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash and loess over colluvium and residuum derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 2,200 to 5,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—brown silt loam

Upper part of subsoil:
4 to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 27 inches—light gray very gravelly sandy loam

Upper part of substratum:
27 to 46 inches—light gray very cobbly sandy loam

Lower part of substratum:
46 to 60 inches—light gray very cobbly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Centralpeak, Mineral, and Oxerine soils
- Canteen soils
- Bearspring soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Steepness of slope

324—Ohscow silt loam, cool, 20 to 40 percent slopes

Composition

Ohscow soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of mountains
Parent material: Mantle of volcanic ash and loess over residuum and colluvium derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 2,200 to 5,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 14 inches—light yellowish brown silt loam

Lower part of subsoil:
14 to 25 inches—pale brown gravelly sandy loam

Upper part of substratum:
25 to 39 inches—very pale brown very gravelly sandy loam

Lower part of substratum:
39 to 60 inches—light gray very cobbly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Moscow and Oxerine soils
- Canteen soils
- Soils that have weathered granitic rock at a depth of 10 to 20 inches
- Bearspring soils
- Codylake soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

325—Ohscow silt loam, cool, 40 to 65 percent slopes

Composition

Ohscow soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash and loess over colluvium and residuum derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 2,200 to 5,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 14 inches—light yellowish brown silt loam

Lower part of subsoil:
14 to 25 inches—pale brown gravelly sandy loam

Upper part of substratum:
25 to 39 inches—very pale brown very gravelly sandy loam

Lower part of substratum:
39 to 60 inches—light gray very cobbly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Moscow and Oxerine soils
- Canteen soils
- Soils that have weathered granitic rock at a depth of 10 to 20 inches
- Bearspring soils
- Codylake soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Steepness of slope

326—Okanogan loam, 0 to 5 percent slopes

Composition

Okanogan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Flood plains and low stream terraces
Parent material: Alluvium
Slope range: 0 to 5 percent
Elevation: 780 to 900 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Upper part of surface layer:
0 to 14 inches—dark grayish brown loam

Lower part of surface layer:
14 to 24 inches—grayish brown very fine sandy loam

Subsoil:
24 to 42 inches—brown, calcareous very fine sandy loam

Upper part of substratum:
42 to 48 inches—pale brown, calcareous fine sandy loam

Middle part of substratum:
48 to 51 inches—pale brown, calcareous fine sand

Lower part of substratum:
51 to 60 inches—pale brown, calcareous fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Slight
Frequency, duration, and period of flooding: Occasional, long periods in January through April

Contrasting Inclusions

- Aeneas soils
- Pogue soils
- Monse soils
- Ellisforde soils
- Typic Haplaquolls

Major Uses

Irrigated and nonirrigated cropland, irrigated and nonirrigated hay and pasture, irrigated orchards, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is subject to flooding.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by flooding and water erosion.

327—Omak silt loam, 0 to 8 percent slopes

Composition

Omak soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces
Parent material: Intermixed glacial lake sediment and glacial till mixed with a component of loess and volcanic ash
Slope range: 0 to 8 percent
Elevation: 2,100 to 3,000 feet
Average annual precipitation: 15 to 18 inches

Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 10 inches—brown silt loam

Subsurface layer:
10 to 15 inches—pale brown silt loam

Upper part of subsoil:
15 to 26 inches—light brownish gray and light gray silt loam
26 to 38 inches—light yellowish brown silty clay loam

Lower part of subsoil:
38 to 45 inches—light yellowish brown hardpan
45 to 60 inches—light gray hardpan

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to a hardpan)
Drainage class: Moderately well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through April (see “Water Features” table)

Contrasting Inclusions

- Cedonia soils
- Swipkin soils
- Martella soils
- Bernhill soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, recreation, and nonirrigated cropland

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, wetness, and rooting depth.

328—Owhi loam, 0 to 8 percent slopes

Composition

Owhi soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 0 to 8 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 7 inches—grayish brown loam

Lower part of surface layer:
7 to 12 inches—brown loam

Upper part of subsoil:
12 to 20 inches—light yellowish brown gravelly loam

Lower part of subsoil:
20 to 26 inches—pale brown very gravelly sandy loam

Substratum:
26 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Fivelakes soils

• Soils that are very gravelly or very cobbly sand below a depth of about 10 inches
• Haley soils
• Picard soils

Major Uses

Irrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
• This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and droughtiness.

329—Owhi stony loam, 3 to 30 percent slopes

Composition

Owhi soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces and terrace escarpments
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 3 to 30 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 6 inches—grayish brown stony loam

Lower part of surface layer:
6 to 12 inches—brown loam

Upper part of subsoil:
12 to 18 inches—pale brown sandy loam

Lower part of subsoil:
18 to 23 inches—yellowish brown gravelly sandy loam

Upper part of substratum:
23 to 29 inches—pale brown very gravelly loamy coarse sand

Lower part of substratum:
29 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight to severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Soils that have a very cobbly loam or very cobbly sandy loam surface layer
• Soils that have sand or very gravelly sand at a depth of about 10 inches
• Soils that are very gravelly sand throughout
• Fivelakes soils

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

• This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
• This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, large stones, and droughtiness.

330—Owhi-Haley fine sandy loams complex, 0 to 25 percent slopes

Composition

Owhi soil and similar soils: 45 percent
Haley soil and similar soils: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Hummocky outwash terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 0 to 25 percent
Elevation: 2,000 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Owhi

Surface layer:
0 to 9 inches—grayish brown fine sandy loam

Subsoil:
9 to 18 inches—brown gravelly fine sandy loam

Substratum:
18 to 60 inches—multicolored extremely gravelly coarse sand

Haley

Surface layer:
0 to 10 inches—gray and grayish brown fine sandy loam

Subsoil:
10 to 24 inches—brown fine sandy loam

Upper part of substratum:
24 to 30 inches—light brownish gray loamy fine sand

Lower part of substratum:
30 to 60 inches—multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Owhi—moderately rapid over very rapid; Haley—moderate over very rapid
Available water capacity: Owhi—low; Haley—moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight to severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Conconully and Disautel soils
- Emdent soils
- Fivelakes soils
- Picard soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- The soils in this unit are too sandy to support the sidewalls of trenches for conventional pipeline installation.
- The soils in this unit are too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If the soils in this unit are used for irrigated crops, they are limited by steepness of slope, water and wind erosion, and droughtiness.

331—Oxerine silt loam, 5 to 20 percent slopes

Composition

Oxerine soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders and ridges of hills and mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metamorphic rock
Slope range: 5 to 20 percent
Elevation: 2,000 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 11 inches—brown channery silt loam

Lower part of subsoil:
11 to 20 inches—light yellowish brown very channery loam

Substratum:
20 to 28 inches—light yellowish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Elbowlake and Nevine soils
- Wilmont and Inkler soils
- Raisio soils
- Soils that have bedrock at a depth of 10 to 20 inches
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, rooting depth, and droughtiness.

332—Oxerine silt loam, 20 to 40 percent slopes

Composition

Oxerine soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metamorphic rock
Slope range: 20 to 40 percent
Elevation: 2,000 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 11 inches—brown channery silt loam

Lower part of subsoil:
11 to 20 inches—light yellowish brown very channery loam

Substratum:
20 to 28 inches—light yellowish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Elbowlake and Nevine soils
- Wilmont and Inkler soils
- Henneway soils
- Raisio soils
- Soils that have bedrock at a depth of 10 to 20 inches
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

333—Oxerine silt loam, 40 to 65 percent slopes

Composition

Oxerine soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metamorphic rock
Slope range: 40 to 65 percent
Elevation: 2,000 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 11 inches—brown channery silt loam

Lower part of subsoil:
11 to 20 inches—light yellowish brown very channery loam

Substratum:
20 to 28 inches—light yellowish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Elbowlake and Nevine soils
- Wilmont and Inkler soils
- Henneway soils
- Raisio soils
- Soils that have bedrock at a depth of 10 to 20 inches
- Rock outcrop

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Steepness of slope

334—Oxerine-Rock outcrop complex, 5 to 30 percent slopes

Composition

Oxerine soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metamorphic rock
Slope range: 5 to 30 percent
Elevation: 2,000 to 5,700 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Oxerine Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 11 inches—brown channery silt loam

Lower part of subsoil:
11 to 20 inches—light yellowish brown very channery loam

Substratum:
20 to 28 inches—light yellowish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Phyllite, schist, slate, graywacke, and quartzite

Contrasting Inclusions

- Elbowlake and Nevine soils
- Wilmont and Inkler soils
- Raisio soils
- Soils that have bedrock at a depth of 10 to 20 inches
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Rock outcrop

335—Oxerine-Rock outcrop complex, 30 to 65 percent slopes

Composition

Oxerine soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash over residuum and colluvium derived from metamorphic rock
Slope range: 30 to 65 percent
Elevation: 2,000 to 5,700 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Oxerine Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 11 inches—brown channery silt loam

Lower part of subsoil:
11 to 28 inches—light yellowish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Phyllite, schist, slate, graywacke, and quartzite

Contrasting Inclusions

- Elbowlake and Nevine soils
- Wilmont and Inkler soils

- Raisio soils
- Soils that have bedrock at a depth of 10 to 20 inches
- Soils that have a very stony surface

Major Uses

Timber production, wildlife habitat, watershed, livestock grazing, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: Rock outcrop and steepness of slope

336—Parmenter silt loam, 0 to 8 percent slopes

Composition

Parmenter soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces and kame terraces
Parent material: Volcanic ash over glacial outwash
Slope range: 0 to 8 percent
Elevation: 1,900 to 3,500 feet
Average annual precipitation: 15 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Surface layer:
0 to 4 inches—grayish brown silt loam

Subsoil:
4 to 16 inches—pale brown stony silt loam

Upper part of substratum:
16 to 31 inches—pale brown very stony loamy sand

Lower part of substratum:
31 to 60 inches—multicolored extremely cobbly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Nevine and Merkel soils
- Wapal soils
- Aquic Xerofluvents
- Soils that have a stony or bouldery surface

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, water erosion, and large stones.

337—Parmenter silt loam, 8 to 20 percent slopes

Composition

Parmenter soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces and kame terraces

Parent material: Volcanic ash over glacial outwash
Slope range: 8 to 20 percent
Elevation: 1,900 to 3,500 feet
Average annual precipitation: 15 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Surface layer:
0 to 4 inches—grayish brown silt loam

Subsoil:
4 to 16 inches—pale brown stony silt loam

Upper part of substratum:
16 to 31 inches—pale brown very stony loamy sand

Lower part of substratum:
31 to 60 inches—multicolored extremely cobbly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Inkler, Merkel, and Nevine soils
- Wapal soils
- Soils that have a stony or bouldery surface

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, droughtiness, and large stones.

338—Parmenter silt loam, 20 to 40 percent slopes

Composition

Parmenter soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Kames and terrace escarpments
Parent material: Volcanic ash over glacial outwash
Slope range: 20 to 40 percent
Elevation: 1,900 to 3,500 feet
Average annual precipitation: 15 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Surface layer:
0 to 4 inches—grayish brown silt loam

Subsoil:
4 to 16 inches—pale brown stony silt loam

Upper part of substratum:
16 to 31 inches—pale brown very stony loamy sand

Lower part of substratum:
31 to 60 inches—multicolored extremely cobbly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Inkler, Merkel, and Nevine soils
- Wapal soils
- Soils that have a stony or bouldery surface

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

339—Parmenter bouldery silt loam, 8 to 20 percent slopes

Composition

Parmenter soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Kames and kame terraces
Parent material: Volcanic ash over glacial outwash
Slope range: 8 to 20 percent
Elevation: 1,900 to 3,500 feet
Average annual precipitation: 15 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Boulders and stones cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 5 inches—brown bouldery silt loam

Subsoil:
5 to 15 inches—pale brown bouldery silt loam

Upper part of substratum:
15 to 27 inches—pale brown extremely bouldery loamy coarse sand

Lower part of substratum:
27 to 60 inches—pale brown extremely bouldery loamy fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate

Contrasting Inclusions

- Inkler, Merkel, and Nevine soils
- Wapal soils
- Soils that have a very bouldery surface

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by large stones, steepness of slope, water erosion, and droughtiness.

340—Peshastin stony fine sandy loam, 0 to 10 percent slopes

Composition

Peshastin soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and moraines
Parent material: Glacial outwash and ablation glacial till mixed with loess
Slope range: 0 to 10 percent
Elevation: 950 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F

Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 10 inches—grayish brown stony fine sandy loam

Upper part of subsoil:
10 to 21 inches—pale brown fine sandy loam

Lower part of subsoil:
21 to 60 inches—light yellowish brown, calcareous very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Aeneas soils
- Pogue and Strat soils
- Couleedam and Soaplake soils
- Stubblefield soils
- Quincy and Skaha soils
- Malott, Farrell, Cashmere, and Cashmont soils

Major Uses

Livestock grazing, irrigated orchards, irrigated hay and pasture, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by large stones, steepness of slope, and droughtiness.

341—Peshastin stony fine sandy loam, 10 to 30 percent slopes

Composition

Peshastin soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and moraines
Parent material: Glacial outwash and ablation glacial till mixed with loess
Slope range: 10 to 30 percent
Elevation: 950 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 10 inches—grayish brown stony fine sandy loam

Upper part of subsoil:
10 to 21 inches—pale brown fine sandy loam

Lower part of subsoil:
21 to 60 inches—light yellowish brown, calcareous very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Aeneas soils that have a sandy substratum
- Pogue and Strat soils
- Couleedam and Soaplake soils
- Stubblefield soils
- Quincy and Skaha soils
- Malott, Farrell, Cashmere, and Cashmont soils

Major Uses

Livestock grazing, irrigated orchards, irrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

342—Peshastin extremely bouldery loam, 20 to 60 percent slopes

Composition

Peshastin soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments and moraines
Parent material: Glacial outwash and ablation glacial till mixed with loess
Slope range: 20 to 60 percent
Elevation: 900 to 2,400 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Boulders and stones cover 15 to 50 percent

Typical Profile

Surface layer:
0 to 8 inches—grayish brown extremely bouldery loam

Upper part of subsoil:
8 to 22 inches—pale brown cobbly sandy loam

Lower part of subsoil:
22 to 60 inches—light brownish gray, calcareous extremely cobbly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Pogue and Strat soils
- Couleedam and Soaplake soils
- Stubblefield soils
- Quincy and Skaha soils
- Malott, Farrell, Cashmere, and Cashmont soils
- Rock outcrop

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, or brush management using ground equipment.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

343—Phoebe fine sandy loam, 0 to 5 percent slopes

Composition

Phoebe soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with volcanic ash and loess
Slope range: 0 to 5 percent
Elevation: 1,400 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown and grayish brown fine sandy loam

Upper part of subsoil:
11 to 30 inches—brown fine sandy loam

Lower part of subsoil:
30 to 47 inches—pale brown sandy loam

Substratum:
47 to 60 inches—pale brown loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Hunters soils
- Bong soils
- Garrison and Hallcreek soils
- Dart and Bisbee soils
- Soils that are moderately well drained and have redoximorphic features below a depth of about 24 inches

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated and irrigated hay and pasture, building site development, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

344—Phoebe fine sandy loam, 5 to 10 percent slopes

Composition

Phoebe soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with volcanic ash and loess
Slope range: 5 to 10 percent
Elevation: 1,400 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown and grayish brown fine sandy loam

Upper part of subsoil:
11 to 30 inches—brown fine sandy loam

Lower part of subsoil:
30 to 47 inches—pale brown sandy loam

Substratum:
47 to 60 inches—pale brown loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Hunters soils
- Bong soils
- Garrison and Hallcreek soils
- Dart and Bisbee soils

Major Uses

Nonirrigated and irrigated cropland, nonirrigated and irrigated hay and pasture, timber production, livestock grazing, building site development, wildlife habitat, recreation, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

345—Phoebe fine sandy loam, 10 to 25 percent slopes

Composition

Phoebe soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash mixed with volcanic ash and loess
Slope range: 10 to 25 percent
Elevation: 1,400 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown and grayish brown fine sandy loam

Upper part of subsoil:
11 to 30 inches—brown fine sandy loam

Lower part of subsoil:
30 to 47 inches—pale brown sandy loam

Substratum:
47 to 60 inches—pale brown loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Hunters soils that are silt loam throughout
- Bong soils that are sandy below a depth of about 14 inches
- Garrison and Hallcreek soils that have an extremely gravelly sand substratum
- Dart and Bisbee soils that are sandy throughout

Major Uses

Timber production, livestock grazing, nonirrigated cropland and hay and pasture, and wildlife habitat

Use and Management

Timber production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind and water erosion.

346—Phoebe fine sandy loam, 40 to 65 percent slopes

Composition

Phoebe soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments and backslopes of hills
Parent material: Glacial outwash mixed with volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown and grayish brown fine sandy loam

Upper part of subsoil:
11 to 30 inches—brown fine sandy loam

Lower part of subsoil:
30 to 47 inches—pale brown sandy loam

Substratum:
47 to 60 inches—pale brown loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Soils that have a stony surface
- Cedonia soils
- Dehart soils
- Dart soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitation for planting: Steepness of slope

347—Phoebe fine sandy loam, dry, 0 to 5 percent slopes

Composition

Phoebe soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with volcanic ash and loess
Slope range: 0 to 5 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 10 inches—brown fine sandy loam

Subsoil:
10 to 27 inches—light yellowish brown fine sandy loam

Upper part of substratum:
27 to 36 inches—light yellowish brown fine sandy loam

Lower part of substratum:
36 to 60 inches—light brownish gray loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Bong soils
- Garrison soils
- Donavan soils
- Dart and Bisbee soils
- Hunters soils
- Soils that are underlain by silt loam or silty clay loam lake sediment

Major Uses

Timber production, livestock grazing, nonirrigated cropland, watershed, building site development, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by wind erosion.

348—Phoebe fine sandy loam, dry, 5 to 10 percent slopes

Composition

Phoebe soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with volcanic ash and loess
Slope range: 5 to 10 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 10 inches—brown fine sandy loam

Subsoil:
10 to 27 inches—light yellowish brown fine sandy loam

Upper part of substratum:
27 to 36 inches—light yellowish brown fine sandy loam

Lower part of substratum:
36 to 60 inches—light brownish gray loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

• Bong soils
• Garrison soils
• Donavan soils
• Dart and Bisbee soils
• Hunters soils
• Soils that are underlain by silt loam or silty clay loam lake sediment

Major Uses

Timber production, livestock grazing, nonirrigated cropland, building site development, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

349—Phoebe fine sandy loam, dry, 10 to 25 percent slopes

Composition

Phoebe soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash mixed with volcanic ash and loess
Slope range: 10 to 25 percent
Elevation: 1,300 to 2,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 10 inches—brown fine sandy loam

Subsoil:
10 to 27 inches—light yellowish brown fine sandy loam

Upper part of substratum:
27 to 36 inches—light yellowish brown fine sandy loam

Lower part of substratum:
36 to 60 inches—light brownish gray loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Bong soils
- Garrison soils
- Donavan soils
- Dart and Bisbee soils
- Hunters soils
- Soils that are underlain by silt loam or silty clay loam lake sediment

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind and water erosion.

350—Phoebe, dry-Dehart complex, 8 to 30 percent slopes

Composition

Phoebe soil, dry, and similar soils: 55 percent
Dehart soil and similar soils: 25 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Phoebe—glacial outwash mixed with a component of loess and volcanic ash; Dehart—colluvium derived from glacial till and metamorphic rock mixed with a component of loess and volcanic ash
Slope range: 8 to 30 percent
Elevation: 1,300 to 1,600 feet
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Phoebe

Organic mat on surface: 0.25 inch thick

Surface layer:
0 to 16 inches—grayish brown fine sandy loam

Upper part of subsoil:
16 to 30 inches—yellowish brown gravelly fine sandy loam

Lower part of subsoil:
30 to 39 inches—light olive brown gravelly sandy loam

Substratum:
39 to 60 inches—light olive brown loamy sand

Dehart

Organic mat on surface: 3 inches thick

Upper part of surface layer:
0 to 7 inches—dark grayish brown gravelly loam

Lower part of surface layer:
7 to 11 inches—pale brown very gravelly loam

Upper part of subsoil:
11 to 32 inches—light yellowish brown very gravelly sandy loam

Lower part of subsoil:
32 to 60 inches—light yellowish brown very cobbly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Phoebe—moderately rapid over very rapid; Dehart—moderate
Available water capacity: Phoebe—moderately high; Dehart—moderate

Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate
Hazard of wind erosion (bare surface): Phoebe—severe; Dehart—slight

Contrasting Inclusions

- Garrison soils
- Soils that have a very stony or very cobbly surface
- Soils that have more clay in the subsoil
- Dart soils

Major Uses

Livestock grazing, timber production, wildlife habitat, building site development, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope, wind erosion on the Phoebe soil, and droughtiness of the Dehart soil.

351—Picard very fine sandy loam, 0 to 8 percent slopes

Composition

Picard soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glaciofluvial material mixed with loess
Slope range: 0 to 8 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 5 inches—grayish brown very fine sandy loam

Lower part of surface layer:
5 to 16 inches—brown fine sandy loam

Subsoil:
16 to 40 inches—light yellowish brown fine sandy loam

Upper part of substratum:
40 to 51 inches—light yellowish brown fine sandy loam

Lower part of substratum:
51 to 60 inches—light yellowish brown loamy fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Ewall soils
- Conconully soils
- Timentwa soils
- Nespelem soils

Major Uses

Livestock grazing, nonirrigated and irrigated cropland, nonirrigated and irrigated hay and pasture, watershed, wildlife habitat, recreation, and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

352—Picard very fine sandy loam, 8 to 30 percent slopes

Composition

Picard soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glaciofluvial material mixed with loess
Slope range: 8 to 30 percent
Elevation: 1,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 5 inches—grayish brown very fine sandy loam

Lower part of surface layer:
5 to 16 inches—brown fine sandy loam

Subsoil:
16 to 40 inches—light yellowish brown fine sandy loam

Upper part of substratum:
40 to 51 inches—light yellowish brown fine sandy loam

Lower part of substratum:
51 to 60 inches—light yellowish brown loamy fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Ewall soils
- Conconully soils
- Timentwa soils
- Nespelem soils

Major Uses

Livestock grazing, nonirrigated cropland, watershed, wildlife habitat and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind and water erosion.

353—Pits, sand and gravel

This map unit consists of open excavations from which soil material and underlying sand and gravel have been removed. The unit is used mainly as a source of sand and gravel for roadfill and for construction material such as concrete. It typically is barren or has very sparse vegetation.

354—Pogue fine sandy loam, 0 to 5 percent slopes

Composition

Pogue soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 0 to 5 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 8 inches—brown fine sandy loam

Upper part of subsoil:
8 to 14 inches—pale brown fine sandy loam

Lower part of subsoil:
14 to 22 inches—pale brown gravelly sandy loam

Upper part of substratum:
22 to 29 inches—light brownish gray very gravelly loamy coarse sand

Lower part of substratum:
29 to 60 inches—multicolored very gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha soils
- Quincy soils
- Peshastin soils
- Malott soils
- Cashmere and Cashmont soils
- Soils that have a stony or very stony surface

Major Uses

Livestock grazing, irrigated and nonirrigated cropland, irrigated hay and pasture, irrigated orchards, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by wind erosion and droughtiness.

355—Pogue fine sandy loam, 5 to 10 percent slopes

Composition

Pogue soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 5 to 10 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 8 inches—brown fine sandy loam

Upper part of subsoil:
8 to 14 inches—pale brown fine sandy loam

Lower part of subsoil:
14 to 22 inches—pale brown gravelly sandy loam

Upper part of substratum:
22 to 29 inches—light brownish gray very gravelly loamy coarse sand

Lower part of substratum:
29 to 60 inches—multicolored very gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha soils
- Quincy soils
- Peshastin soils
- Malott soils
- Cashmere and Cashmont soils
- Soils that have a stony or very stony surface

Major Uses

Livestock grazing, irrigated cropland, irrigated hay and pasture, irrigated orchards, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, wind erosion, and droughtiness.

356—Pogue fine sandy loam, 10 to 25 percent slopes

Composition

Pogue soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 10 to 25 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 8 inches—brown fine sandy loam

Upper part of subsoil:
8 to 14 inches—pale brown fine sandy loam

Lower part of subsoil:
14 to 22 inches—pale brown gravelly sandy loam

Upper part of substratum:
22 to 29 inches—light brownish gray very gravelly loamy coarse sand

Lower part of substratum:
29 to 60 inches—multicolored very gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

• Skaha soils
• Quincy and Winchester soils
• Peshastin soils
• Malott soils
• Cashmere and Cashmont soils
• Soils that have a stony or very stony surface

Major Uses

Livestock grazing, irrigated hay and pasture, irrigated orchards, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
• The soil in this unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
• The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

• If the soil in this unit is used for irrigated crops, it is limited by steepness of slope, water and wind erosion, and droughtiness.

357—Pogue gravelly fine sandy loam, 0 to 10 percent slopes

Composition

Pogue soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 0 to 10 percent
Elevation: 800 to 1,500 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—grayish brown gravelly fine sandy loam

Subsoil:
12 to 29 inches—light brownish gray gravelly fine sandy loam

Substratum:
29 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Skaha soils
- Quincy and Winchester soils
- Peshastin soils
- Malott soils
- Cashmere and Cashmont soils
- Soils that have a cobbly, stony, or very stony surface

Major Uses

Livestock grazing, irrigated hay and pasture, irrigated orchards, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

358—Pogue stony fine sandy loam, 0 to 25 percent slopes

Composition

Pogue soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 0 to 25 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 7 inches—brown stony fine sandy loam

Subsoil:
7 to 21 inches—pale brown gravelly fine sandy loam

Substratum:
21 to 60 inches—multicolored very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Skaha soils
- Quincy and Winchester soils
- Peshastin soils
- Malott soils
- Cashmere and Cashmont soils

Major Uses

Building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and droughtiness.

359—Pogue stony fine sandy loam, 25 to 65 percent slopes

Composition

Pogue soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash mixed with loess in the upper part
Slope range: 25 to 65 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 7 inches—brown stony fine sandy loam

Subsoil:
7 to 21 inches—pale brown gravelly fine sandy loam

Substratum:
21 to 60 inches—multicolored very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Skaha soils
- Quincy and Winchester soils
- Peshastin soils
- Malott soils
- Cashmere and Cashmont soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

360—Poween loam, 0 to 5 percent slopes

Composition

Poween soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Stream terraces and alluvial fans
Parent material: Calcareous alluvium
Slope range: 0 to 5 percent
Elevation: 1,600 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 12 inches—very dark gray loam

Lower part of surface layer:
12 to 30 inches—dark grayish brown, calcareous sandy loam

Upper part of substratum:
30 to 44 inches—grayish brown, calcareous sandy loam

Lower part of substratum:
44 to 60 inches—light brownish gray, calcareous loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Moderate
Water table: Present in February through May (see “Water Features” table)
Frequency of flooding: Rare
Salinity: Very slightly saline

Contrasting Inclusions

- Bossburg soils
- Emdent soils
- Nespelem soils

Major Uses

Livestock grazing, nonirrigated hay and pasture, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil has a high water table at certain times of the year that limits use of the soil.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by water erosion.

361—Quincy sand, 8 to 50 percent slopes, eroded

Composition

Quincy soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Dunes
Parent material: Eolian sand and glacial outwash sand
Slope range: 8 to 50 percent
Elevation: 800 to 1,300 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 1 inch—pale brown sand

Upper part of substratum:
1 inch to 12 inches—light yellowish brown sand

Lower part of substratum:
12 to 60 inches—pale yellow sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Very severe

Contrasting Inclusions

- Skaha soils
- Pogue soils
- Cashmere and Cashmont soils
- Aeneas soils

Major Uses

Livestock grazing, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

362—Quincy fine sand, 25 to 60 percent slopes

Composition

Quincy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash sand and eolian sand
Slope range: 25 to 60 percent
Elevation: 800 to 1,600 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 5 inches—brown fine sand

Substratum:
5 to 60 inches—pale brown fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Very severe

Contrasting Inclusions

- Skaha soils
- Pogue soils

- Couleedam and Soaplake soils
- Aeneas soils
- Cashmere soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

363—Quincy loamy sand, fan, 2 to 10 percent slopes

Composition

Quincy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans
Parent material: Sandy alluvium and glacial outwash sand
Slope range: 2 to 10 percent
Elevation: 850 to 1,100 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 12 inches—brown loamy sand

Upper part of substratum:
12 to 40 inches—yellowish brown and light yellowish brown sand

Middle part of substratum:
40 to 49 inches—pale brown gravelly coarse sand

Lower part of substratum:
49 to 60 inches—very pale brown sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha soils
- Pogue soils
- Aeneas soils
- Cashmere, Cashmont, and Okanogan soils

Major Uses

Livestock grazing, irrigated hay and pasture, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

364—Quincy loamy fine sand, 0 to 10 percent slopes

Composition

Quincy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash sand and eolian sand
Slope range: 0 to 10 percent
Elevation: 800 to 1,600 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 5 inches—grayish brown loamy fine sand

Upper part of substratum:
5 to 28 inches—brown loamy fine sand

Middle part of substratum:
28 to 52 inches—pale brown and light brownish gray, calcareous loamy sand

Lower part of substratum:
52 to 60 inches—multicolored, calcareous coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha soils
- Pogue soils
- Monse soils
- Aeneas soils
- Cashmere and Cashmont soils

Major Uses

Livestock grazing, irrigated hay and pasture (fig. 12), irrigated orchards, irrigated cropland, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

365—Quincy loamy fine sand, 0 to 10 percent slopes, eroded

Composition

Quincy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces and dunes
Parent material: Glacial outwash sand and eolian sand
Slope range: 0 to 10 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 1 inch—grayish brown loamy fine sand

Upper part of substratum:
1 inch to 28 inches—brown loamy fine sand

Middle part of substratum:
28 to 52 inches—pale brown and light brownish gray, calcareous loamy sand

Lower part of substratum:
52 to 60 inches—multicolored, calcareous coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha soils
- Pogue soils
- Monse soils that are moderately well drained and are silt loam and silty clay loam throughout
- Aeneas soils
- Cashmere and Cashmont soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Figure 12.—Irrigated alfalfa in an area of Quincy loamy fine sand, 0 to 10 percent slopes, in foreground. Pogue and Skaha soils are on higher terraces in background, and Malott and Couleedam soils are on hills and plateaus.

366—Quincy loamy fine sand, 10 to 25 percent slopes

Composition

Quincy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces, terrace escarpments, and dunes
Parent material: Glacial outwash sand and eolian sand
Slope range: 10 to 25 percent
Elevation: 800 to 1,600 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 5 inches—grayish brown loamy fine sand

Upper part of substratum:
5 to 28 inches—brown loamy fine sand

Middle part of substratum:
28 to 52 inches—pale brown and light brownish gray, calcareous loamy sand

Lower part of substratum:
52 to 60 inches—multicolored, calcareous coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Cropland—moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha soils
- Pogue soils
- Ellisforde soils
- Aeneas soils
- Cashmere and Cashmont soils

Major Uses

Livestock grazing, recreation, watershed, wildlife habitat, irrigated orchards, and irrigated hay and pasture

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If the soil in this unit is used for irrigated crops, it is limited by steepness of slope, droughtiness, fast infiltration, and water erosion.

367—Quincy-Aeneas complex, 3 to 15 percent slopes

Composition

Quincy soil and similar soils: 55 percent
Aeneas soil and similar soils: 35 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Quincy—undulating dunes; Aeneas—depressions between dunes
Parent material: Quincy—glacial outwash sand; Aeneas—wind-reworked glacial outwash mixed with loess in the upper part
Slope range: Quincy—3 to 15 percent; Aeneas—3 to 8 percent
Elevation: 1,500 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Quincy

Surface layer:
0 to 7 inches—brown loamy sand

Upper part of substratum:
7 to 17 inches—yellowish brown loamy fine sand

Lower part of substratum:
17 to 60 inches—light yellowish brown and light olive brown fine sand

Aeneas

Surface layer:
0 to 10 inches—grayish brown fine sandy loam

Subsoil:
10 to 27 inches—pale brown fine sandy loam

Substratum:
27 to 60 inches—light brownish gray and multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Quincy—excessively drained; Aeneas—well drained
Permeability: Quincy—rapid; Aeneas—moderately rapid
Available water capacity: Quincy—moderate; Aeneas—moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion (Quincy): Cropland—slight; rangeland—slight
Hazard of water erosion (Aeneas): Cropland—moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Farrell soils
- Soils that are underlain by calcareous silt loam glacial lake sediment at a depth of about 35 inches
- Cashmere soils

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration in the Quincy soil and by water erosion on the Aeneas soil.

368—Raisio channery loam, dry, 40 to 65 percent slopes

Composition

Raisio soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 1,900 to 4,700 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—grayish brown channery loam

Lower part of surface layer:
5 to 12 inches—grayish brown very channery loam

Subsoil:
12 to 28 inches—grayish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Rufus soils
- Oxerine soils
- Dehart soils
- Rock outcrop
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

369—Raisio, dry-Rock outcrop complex, 20 to 40 percent slopes

Composition

Raisio soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes, shoulders, and ridges of hills and mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,100 to 4,000 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Raisio Soil

Typical profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—grayish brown channery loam

Lower part of surface layer:
5 to 12 inches—grayish brown very channery loam

Subsoil:
12 to 28 inches—grayish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Rock Outcrop

Kind of rock: Phyllite, schist, slate, graywacke, and quartzite

Contrasting Inclusions

- Rufus soils
- Oxerine soils
- Donavan soils
- Elbowlake soils
- Apex soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

370—Raisio-Rufus channery loams complex, 8 to 30 percent slopes

Composition

Raisio soil and similar soils: 45 percent
Rufus soil and similar soils: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders, ridges, and backslopes of mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 8 to 30 percent
Elevation: 2,100 to 4,400 feet
Average annual precipitation: 19 to 22 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Raisio

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—grayish brown channery loam

Subsoil:
8 to 14 inches—brown very channery loam

Substratum:
14 to 24 inches—light brownish gray very channery loam

Bedrock:
24 to 28 inches—phyllite

Rufus

Upper part of surface layer:
0 to 7 inches—dark brown channery loam

Lower part of surface layer:
7 to 12 inches—brown very channery loam

Subsoil:
12 to 14 inches—pale brown extremely channery sandy loam

Bedrock:
14 to 18 inches—schist

Soil Properties and Qualities

Depth class: Raisio soil—moderately deep (20 to 40 inches to bedrock); Rufus—shallow (10 to 20 inches to bedrock)

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: Raisio—20 to 40 inches; Rufus—10 to 20 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Oxerine soils
- Wellscreek and Wilmont soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Raisio—rock fragments in the soil; Rufus—depth to bedrock and rock fragments in the soil

371—Raisio-Rufus channery loams complex, 30 to 65 percent slopes

Composition

Raisio soil and similar soils: 45 percent
Rufus soil and similar soils: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 30 to 65 percent
Elevation: 2,100 to 4,400 feet
Average annual precipitation: 19 to 22 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Raisio

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—grayish brown channery loam

Subsoil:
8 to 14 inches—brown very channery loam

Substratum:
14 to 24 inches—light brownish gray very channery loam

Bedrock:
24 to 28 inches—phyllite

Rufus

Upper part of surface layer:
0 to 7 inches—dark brown channery loam

Lower part of surface layer:
7 to 12 inches—brown very channery loam

Subsoil:
12 to 14 inches—pale brown extremely channery sandy loam

Bedrock:
14 to 18 inches—schist

Soil Properties and Qualities

Depth class: Raisio—moderately deep (20 to 40 inches to bedrock); Rufus—shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: Raisio—20 to 40 inches; Rufus—10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Severe or very severe

Contrasting Inclusions

- Oxerine soils
- Wellscreek and Wilmont soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Raisio—rock fragments in the soil and steepness of slope; Rufus—depth to bedrock, rock fragments in the soil, and steepness of slope

372—Raisio, dry-Rufus channery loams complex, 30 to 65 percent slopes

Composition

Raisio soil and similar soils: 60 percent
Rufus soil and similar soils: 30 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Raisio—backslopes and shoulders of mountains; Rufus—ridges and shoulders of mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 30 to 65 percent
Elevation: 1,900 to 4,700 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Raisio

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—grayish brown channery loam

Lower part of surface layer:
5 to 12 inches—grayish brown very channery loam

Subsoil:
12 to 28 inches—grayish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Rufus

Upper part of surface layer:
0 to 5 inches—dark brown channery loam

Lower part of surface layer:
5 to 15 inches—dark brown very channery sandy loam

Bedrock:
15 to 19 inches—schist

Soil Properties and Qualities

Depth class: Raisio—moderately deep (20 to 40 inches to bedrock); Rufus—shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: Raisio—20 to 40 inches; Rufus—10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Moderate or severe

Contrasting Inclusions

- Donavan and Stevens soils
- Oxerine soils
- Dehart soils
- Rock outcrop
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

373—Raisio, dry-Rufus-Rock outcrop complex, 30 to 65 percent slopes

Composition

Raisio soil and similar soils: 40 percent
Rufus soil and similar soils: 25 percent

Rock outcrop: 15 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 30 to 65 percent
Elevation: 2,500 to 4,000 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Raisio Soil

Typical profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—grayish brown channery loam

Lower part of surface layer:
5 to 12 inches—grayish brown very channery loam

Subsoil:
12 to 28 inches—grayish brown very channery loam

Bedrock:
28 to 32 inches—phyllite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Moderate or severe

Rufus Soil

Typical profile

Upper part of surface layer:
0 to 5 inches—dark brown channery loam

Lower part of surface layer:
5 to 15 inches—dark brown very channery loam

Bedrock:
15 to 19 inches—schist

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Moderate or severe

Rock Outcrop

Kind of rock: Schist and phyllite

Contrasting Inclusions

- Oxerine soils
- Donavan soils
- Elbowlake soils
- Apex soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

374—Raisio, warm-Rufus channery loams complex, 8 to 30 percent slopes

Composition

Raisio soil and similar soils: 45 percent
Rufus soil and similar soils: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 8 to 30 percent
Elevation: 2,100 to 4,000 feet
Average annual precipitation: 15 to 18 inches

Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Raisio

Surface layer:
0 to 11 inches—yellowish brown channery loam

Subsoil:
11 to 24 inches—light yellowish brown very channery loam

Bedrock:
24 to 28 inches—schist

Rufus

Surface layer:
0 to 12 inches—brown channery loam

Subsoil:
12 to 16 inches—pale brown very channery loam

Bedrock:
16 to 20 inches—quartzitic rock

Soil Properties and Qualities

Depth class: Raisio—moderately deep (20 to 40 inches to bedrock); Rufus—shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: Raisio—20 to 40 inches; Rufus—10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Slight or moderate

Contrasting Inclusions

- Borgeau soils
- Donavan soils
- Apex soils
- Dehart soils
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction.
- The soils in this unit are too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

375—Raisio, warm-Rufus channery loams complex, 30 to 65 percent slopes

Composition

Raisio soil and similar soils: 45 percent
Rufus soil and similar soils: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 30 to 65 percent
Elevation: 2,100 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Raisio

Surface layer:
0 to 11 inches—yellowish brown channery loam

Subsoil:
11 to 24 inches—light yellowish brown very channery loam

Bedrock:
24 to 28 inches—schist

Rufus

Surface layer:
0 to 12 inches—brown channery loam

Subsoil:
12 to 16 inches—pale brown very channery loam

Bedrock:
16 to 20 inches—quartzitic rock

Soil Properties and Qualities

Depth class: Raisio—moderately deep (20 to 40 inches to bedrock); Rufus—shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: Raisio—20 to 40 inches; Rufus—10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Moderate or severe

Contrasting Inclusions

- Borgeau soils

- Donavan soils
- Apex soils
- Dehart soils
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This unit is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

376—Ralsen silt loam, 0 to 3 percent slopes

Composition

Ralsen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Flood plains and low stream terraces
Parent material: Alluvium
Slope range: 0 to 3 percent
Elevation: 1,700 to 2,600 feet
Average annual precipitation: 14 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 11 inches—dark grayish brown silt loam

Upper part of substratum:
11 to 26 inches—mottled, light gray sandy loam and fine sandy loam

Middle part of substratum:
26 to 42 inches—mottled, white fine sandy loam

Lower part of substratum:
42 to 60 inches—brown gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—none or slight; forestland—none
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through August (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in March through May

Contrasting Inclusions

- Narcisse soils
- Bossburg soils
- Aquic Xerofluvents

Major Uses

Timber production and livestock grazing

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable during periods when the soil is dry; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen and thinleaf alder—readily; paper birch, willow, black cottonwood, Douglas-fir, and ponderosa pine—periodically
Limitation for planting: Seasonal high water table

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by flooding and wetness.

377—Ratlake silty clay loam, 0 to 2 percent slopes

Composition

Ratlake soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Closed depressions on valley flats
Parent material: Glacial lake sediment with some recent alluvium
Slope range: 0 to 2 percent

Elevation: 1,100 to 1,350 feet
Average annual precipitation: 9 to 11 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 2 inches—light gray, calcareous silty clay loam

Subsoil:
2 to 18 inches—gray, calcareous silty clay loam

Substratum:
18 to 22 inches—light gray hardpan

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to a hardpan)
Drainage class: Poorly drained
Permeability: Moderately slow
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Ponded for brief periods during March through May
Hazard of water erosion: Rangeland—none
Hazard of wind erosion (bare surface): Moderate
Water table: Present in January through July (see "Water Features" table)
Salinity: Strongly saline

Contrasting Inclusions

- Gooseflats soils
- Soils that have a cemented hardpan at a depth of 20 to 40 inches

Major Uses

Wetland wildlife habitat and livestock grazing

Use and Management

Livestock grazing

- This soil is affected by salt. If the range is in poor condition, salts concentrate on the bare surface as a result of evaporation. Reseeding is very difficult, and only salt-tolerant species should be used.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by rooting depth, wetness, and excess salts.

378—Reardan silt loam, 0 to 8 percent slopes

Composition

Reardan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Plateaus and broad summits of hills
Parent material: Loess
Slope range: 0 to 8 percent
Elevation: 2,500 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 11 inches—grayish brown silt loam

Subsurface layer:
11 to 22 inches—pale brown silt loam

Upper part of subsoil:
22 to 38 inches—brown and pale brown silty clay loam

Middle part of subsoil:
38 to 51 inches—brown silty clay

Lower part of subsoil:
51 to 60 inches—light brown, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Anders soils
- Georgecreek soils
- Broadax soils

Major Uses

Timber production and grazeable woodland

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: High clay content

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by slow permeability, steepness of slope, and water erosion.

379—Reardan silt loam, 8 to 15 percent slopes

Composition

Reardan soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Plateaus and broad summits of hills
Parent material: Loess
Slope range: 8 to 15 percent
Elevation: 2,500 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 11 inches—grayish brown silt loam

Subsurface layer:
11 to 22 inches—pale brown silt loam

Upper part of subsoil:
22 to 38 inches—brown and pale brown silty clay loam

Middle part of subsoil:
38 to 51 inches—brown silty clay

Lower part of subsoil:
51 to 60 inches—light brown, calcareous silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate; forestland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Anders soils
• Georgecreek soils
• Broadax soils

Major Uses

Timber production and grazeable woodland

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: High clay content

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, slow permeability, and water erosion.

380—Rebecca fine sandy loam, 0 to 5 percent slopes

Composition

Rebecca soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Alluvial fans
Parent material: Alluvium
Slope range: 0 to 5 percent
Elevation: 1,200 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 6 inches—gray fine sandy loam

Lower part of surface layer:
6 to 16 inches—grayish brown fine sandy loam

Subsoil:
16 to 36 inches—light brownish gray gravelly fine sandy loam

Substratum:
36 to 60 inches—light brownish gray and gray gravelly fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Haley soils
- Ewall soils
- Narcisse soils
- Conconully soils

Major Uses

Livestock grazing, nonirrigated cropland, nonirrigated and irrigated hay and pasture, building site development, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

381—Rebecca gravelly sandy loam, 3 to 15 percent slopes

Composition

Rebecca soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans
Parent material: Alluvium
Slope range: 3 to 15 percent
Elevation: 1,200 to 2,600 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 15 inches—dark grayish brown and brown gravelly sandy loam

Subsoil:
15 to 45 inches—pale brown and light yellowish brown gravelly sandy loam

Substratum:
45 to 60 inches—light yellowish brown gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Soils that are very gravelly below a depth of about 15 inches
- Cumulic Haploxerolls
- Hobohill soils
- Conconully soils

Major Uses

Livestock grazing, wildlife habitat, watershed, nonirrigated hay and pasture, and recreation

Use and Management

Livestock grazing

- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope.

382—Renha silt loam, 5 to 20 percent slopes

Composition

Renha soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Benches, shoulders, and footslopes of hills and mountains

Parent material: Mantle of volcanic ash and loess over residuum and colluvium derived from limestone, marble, and dolomite
Slope range: 5 to 20 percent
Elevation: 2,300 to 3,800 feet
Average annual precipitation: 20 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 7 inches—pale brown silt loam

Subsurface layer:
7 to 11 inches—very pale brown and light yellowish brown silt loam

Middle part of subsoil:
11 to 22 inches—reddish brown clay

Lower part of subsoil:
22 to 28 inches—reddish brown and reddish yellow gravelly clay loam

Substratum:
28 to 32 inches—limestone

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate

Contrasting Inclusions

- Friedlander soils
- Soils that are 10 to 20 inches deep to limestone
- Soils that have less clay in the subsoil
- Oxerine soils, limestone substratum

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

383—Renha silt loam, 20 to 40 percent slopes

Composition

Renha soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and footslopes of hills and mountains
Parent material: Mantle of volcanic ash and loess over residuum and colluvium derived from limestone, marble, and dolomite
Slope range: 20 to 40 percent
Elevation: 2,800 to 3,800 feet
Average annual precipitation: 20 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 7 inches—pale brown silt loam

Subsurface layer:
7 to 11 inches—very pale brown and light yellowish brown silt loam

Middle part of subsoil:
11 to 22 inches—reddish brown clay

Lower part of subsoil:
22 to 28 inches—reddish brown and reddish yellow gravelly clay loam

Substratum:
28 to 32 inches—limestone

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Friedlander soils
- Soils that are 10 to 20 inches deep to limestone
- Soils that have less clay in the subsoil
- Oxerine soils, limestone substratum

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch and lodgepole pine—periodically
Limitations for planting: None

384—Renha, warm-Oxerine silt loams complex, 20 to 40 percent slopes

Composition

Renha soil and similar soils: 45 percent
Oxerine soil and similar soils: 40 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders, backslopes, and footslopes of mountains
Parent material: Mantle of volcanic ash and loess over residuum and colluvium derived from limestone, marble, and dolomite
Slope range: 20 to 40 percent
Elevation: 2,300 to 3,800 feet
Average annual precipitation: 20 to 22 inches
Average annual air temperature: 43 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Renha

Organic mat on surface: 1 inch thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 7 inches—pale brown silt loam

Subsurface layer:
7 to 11 inches—very pale brown and light yellowish brown silt loam

Middle part of subsoil:
11 to 22 inches—reddish brown clay

Lower part of subsoil:
22 to 28 inches—reddish brown and reddish yellow gravelly clay loam

Bedrock:
28 to 32 inches—limestone

Oxerine

Organic mat on surface: 2 inches thick

Surface layer:
0 to 2 inches—grayish brown silt loam

Upper part of subsoil:
2 to 9 inches—pale brown silt loam

Middle part of subsoil:
9 to 14 inches—yellowish brown channery silt loam

Lower part of subsoil:
14 to 24 inches—pale brown very channery fine sandy loam

Substratum:
24 to 27 inches—light gray very channery fine sandy loam

Bedrock:
27 to 31 inches—limestone

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained

Permeability: Renha—moderately slow; Oxerine—moderate
Available water capacity: Renha—moderately high; Oxerine—low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe; cropland—severe or very severe

Contrasting Inclusions

- Soils that are 10 to 20 inches deep to limestone
- Henneway and Friedlander soils
- Soils that have less clay in the subsoil
- Soils that have a stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: Renha—high clay content; Oxerine—none

385—Republic loam, 3 to 15 percent slopes

Composition

Republic soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Alluvial fans and toeslopes of hills and mountains
Parent material: Alluvium and glacial till mixed with a component of loess and volcanic ash
Slope range: 3 to 15 percent
Elevation: 1,700 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—grayish brown loam

Lower part of surface layer:
5 to 11 inches—grayish brown gravelly loam

Subsoil:
11 to 16 inches—brown gravelly loam

Upper part of substratum:
16 to 38 inches—brown gravelly sandy loam

Lower part of substratum:
38 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Apex soils
- Scoap soils
- Donavan and Stevens soils
- Goldlake and Lostcreek soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing (fig. 13), wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily
Limitations for planting: None

Figure 13.—Cattle grazing on winter wheat in an area of Republic loam, 3 to 15 percent slopes. Mineral soils are on hills in background.

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

386—Republic loam, 15 to 30 percent slopes

Composition

Republic soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 15 to 30 percent
Elevation: 1,700 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—grayish brown loam

Lower part of surface layer:
5 to 11 inches—grayish brown gravelly loam

Subsoil:
11 to 16 inches—brown gravelly loam

Upper part of substratum:
16 to 38 inches—brown gravelly sandy loam

Lower part of substratum:
38 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Apex soils
- Scoap soils
- Donavan and Stevens soils
- Goldlake and Lostcreek soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

387—Republic loam, 30 to 65 percent slopes

Composition

Republic soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Glacial till mixed with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,700 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 5 inches—grayish brown loam

Lower part of surface layer:
5 to 11 inches—grayish brown gravelly loam

Subsoil:
11 to 16 inches—brown gravelly loam

Upper part of substratum:
16 to 38 inches—brown gravelly sandy loam

Lower part of substratum:
38 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Apex soils
- Scoap soils
- Inkler soils
- Donavan soils
- Stapaloop soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily
Limitation for planting: Steepness of slope

388—Resner loam, 0 to 20 percent slopes

Composition

Resner soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Outwash terraces and toeslopes of mountains
Parent material: Volcanic ash over glacial outwash and ablation till derived from granitic rock
Slope range: 0 to 20 percent
Elevation: 3,500 to 5,200 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 5 inches—yellowish brown loam

Subsoil:
5 to 17 inches—light yellowish brown loam

Upper part of substratum:
17 to 34 inches—white very gravelly loamy sand

Lower part of substratum:
34 to 60 inches—white extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Nevine and Stepstone soils
- Andic Cryaquepts and Cryofluvents
- Tunkcreek soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western larch, Douglas-fir, lodgepole pine, and subalpine fir—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and water erosion.

389—Resner loam, 20 to 40 percent slopes

Composition

Resner soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes of mountains and outwash terrace escarpments
Parent material: Volcanic ash over glacial outwash and ablation till derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 3,500 to 5,200 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 5 inches—yellowish brown loam

Subsoil:
5 to 17 inches—light yellowish brown loam

Upper part of substratum:
17 to 34 inches—white very gravelly loamy sand

Lower part of substratum:
34 to 60 inches—white extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Nevine and Stepstone soils
- Buhrig soils
- Tunkcreek soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western larch, Douglas-fir, lodgepole pine, and subalpine fir—readily
Limitations for planting: None

390—Ret silt loam, 0 to 3 percent slopes

Composition

Ret soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Flood plains and low stream terraces
Parent material: Recent alluvium
Slope range: 0 to 3 percent
Elevation: 1,600 to 3,800 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Upper part of surface layer:
0 to 8 inches—very dark gray silt loam

Lower part of surface layer:
8 to 22 inches—very dark grayish brown and dark grayish brown loam

Subsoil:
22 to 30 inches—pale brown sandy loam

Substratum:
30 to 60 inches—mottled, pale brown and very pale brown loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in December through July (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Sanpoil soils
- Boesel and Cubcreek soils
- Aquic Xerofluvents
- Narcisse soils

Major Uses

Livestock grazing, nonirrigated hay and pasture, timber production, wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and western larch—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by wetness.

391—Riverwash

This map unit consists of nearly level bars of recently deposited sand and gravel on flood plains of perennial and intermittent streams. This unit is subject to frequent periods of flooding in October through July that remove and redeposit the material. A water table is at the surface to a depth of 24 inches throughout the year. This unit is dominantly barren, but some areas support a sparse cover of deciduous trees, shrubs, and forbs.

392—Rock outcrop

This map unit consists of areas where exposed bedrock covers 90 percent of the surface or more. It is mainly on ridges, shoulders, and backslopes of hills and mountains. Slopes range from 5 to 100 percent or more. Most of the outcroppings are hard, but some are soft and highly weathered.

Included in this unit are small areas of shallow and very shallow soils that support a sparse cover of grasses, shrubs, and forbs. Scattered coniferous trees are in crevices in the rock, where moisture and small amounts of soil have accumulated.

393—Rock outcrop-Chumstick complex, 20 to 65 percent slopes

Composition

Rock outcrop: 55 percent
Chumstick soil and similar soils: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with volcanic ash and loess
Slope range: 20 to 65 percent
Elevation: 3,500 to 5,000 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Chumstick—boulders and stones cover 15 to 50 percent

Rock Outcrop

Kind of rock: Granitic rock

Chumstick Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—grayish brown extremely bouldery loam

Subsoil:
5 to 12 inches—brown very cobbly sandy loam

Bedrock:
12 to 16 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 4 to 10 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

• Mineral and Capoose soils
• Soils that have bedrock at a depth of 4 to 10 inches
• Merkel soils
• Rubble land

Major Uses

Wildlife habitat, watershed, recreation, limited timber production, and limited livestock grazing

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically

Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

394—Rock outcrop-Chumstick, cold complex, 20 to 65 percent slopes

Composition

Rock outcrop: 55 percent
Chumstick soil and similar soils: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, shoulders, and backslopes of mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with volcanic ash and loess
Slope range: 20 to 65 percent
Elevation: 5,000 to 5,800 feet
Average annual precipitation: 22 to 28 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 85 to 110 days
Rock fragments on surface: Chumstick—boulders and stones cover 15 to 50 percent

Rock Outcrop

Kind of rock: Granitic rock

Chumstick Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—grayish brown extremely bouldery loam

Subsoil:
5 to 12 inches—brown very cobbly sandy loam

Bedrock:
12 to 16 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Mineral and Capoose soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Merkel soils
- Buhrig soils
- Rubble land

Major Uses

Wildlife habitat, watershed, recreation, limited timber production, and limited livestock grazing

Use and Management

Timber Production

Harvesting

- Logging is not recommended on this unit because of the very low productivity and severe limitations for regeneration.

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

395—Rock outcrop-Mineral complex, 30 to 65 percent slopes

Composition

Rock outcrop: 50 percent
Mineral soil and similar soils: 30 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of mountains
Parent material: Colluvium and glacial till derived from granitic rock mixed with a component of loess and volcanic ash in the upper part
Slope range: 30 to 65 percent
Elevation: 2,000 to 4,700 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 110 days
Rock fragments on surface: Mineral—stones cover 0.1 to 3.0 percent

Rock Outcrop

Kind of rock: Granitic rock

Mineral Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—grayish brown stony loam

Subsoil:
6 to 12 inches—pale brown very gravelly loam

Substratum:
12 to 23 inches—very pale brown very stony sandy loam

Bedrock:
23 to 27 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Dinkelman and Bearspring soils
- Centralpeak soils
- Spokane, Vanbrunt, and Skanid soils
- Buhrig and Moses soils
- Rubble land

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically

Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

396—Rock outcrop-Rufus complex, 20 to 65 percent slopes

Composition

Rock outcrop: 55 percent
Rufus soil and similar soils: 25 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes, shoulders, and ridges of hills and mountains
Parent material: Colluvium and residuum derived from metamorphic rock mixed with volcanic ash and loess
Slope range: 20 to 65 percent
Elevation: 2,100 to 4,000 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Rock Outcrop

Kind of rock: Phyllite, schist, slate, graywacke, and quartzite

Rufus Soil

Typical profile

Upper part of surface layer:
0 to 5 inches—brown channery loam

Lower part of surface layer:
5 to 15 inches—brown very channery loam

Bedrock:
15 to 19 inches—schist

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Rangeland—severe or very severe

Contrasting Inclusions

- Raisio soils

- Donavan soils
- Elbowlake soils
- Soils that are somewhat poorly drained

Major Uses

Wildlife habitat, recreation, watershed, and limited livestock grazing

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Depth to bedrock, Rock outcrop, rock fragments in the soil, and steepness of slope

397—Rock outcrop-Soaplake complex, 5 to 30 percent slopes

Composition

Rock outcrop: 45 percent
Soaplake soil and similar soils: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Ridges, shoulders, and backslopes of hills
Parent material: Colluvium and residuum derived from granitic rock mixed with loess
Slope range: 5 to 30 percent
Elevation: 1,300 to 2,400 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Rock Outcrop

Kind of rock: Granitic rock

Soaplake Soil

Typical profile

Surface layer:
0 to 10 inches—dark grayish brown loam

Upper part of subsoil:
10 to 14 inches—yellowish brown loam

Lower part of subsoil:
14 to 17 inches—light yellowish brown loam

Bedrock:
17 to 21 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Couleedam soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Roosevelt soils
- Malott soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

398—Rock outcrop-Swakane complex, 5 to 30 percent slopes

Composition

Rock outcrop: 50 percent
Swakane soil and similar soils: 35 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash

Slope range: 5 to 30 percent
Elevation: 1,500 to 3,000 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Swakane—stones cover 3 to 15 percent

Rock Outcrop

Kind of rock: Granitic rock

Swakane Soil

Typical profile

Upper part of surface layer:
0 to 7 inches—dark brown very stony loam

Lower part of surface layer:
7 to 11 inches—brown very gravelly loam

Subsoil:
11 to 14 inches—yellowish brown very cobbly loam

Bedrock:
14 to 18 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Conconully and Donavan soils
- Wynhoff and Vanbrunt soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Ginnis and Spokane soils
- Rubble land

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

399—Rock outcrop-Vanbrunt complex, 20 to 65 percent slopes

Composition

Rock outcrop: 45 percent
Vanbrunt soil and similar soils: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders and backslopes of hills and mountains
Parent material: Colluvium derived from granitic glacial till and granitic rock mixed with a component of loess and volcanic ash
Slope range: 20 to 65 percent
Elevation: 1,800 to 3,500 feet
Average annual precipitation: 14 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Vanbrunt—stones cover 3 to 15 percent

Rock Outcrop

Kind of rock: Granitic rock

Vanbrunt Soil

Typical profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 3 inches—brown very stony sandy loam

Lower part of surface layer:
3 to 10 inches—brown very gravelly sandy loam

Subsoil:
10 to 19 inches—light yellowish brown extremely cobbly sandy loam

Substratum:
19 to 25 inches—very pale brown very cobbly sandy loam

Bedrock:
25 to 29 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low

Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Swakane soils
- Whitestone soils
- Rubble land

Major Uses

Wildlife habitat, watershed, and limited livestock grazing

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

400—Roosevelt-Soaplake-Rock outcrop complex, 5 to 30 percent slopes

Composition

Roosevelt soil and similar soils: 45 percent
Soaplake soil and similar soils: 25 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, shoulders, and backslopes of hills
Parent material: Residuum and colluvium derived from granitic rock mixed with loess
Slope range: 5 to 30 percent
Elevation: 1,300 to 2,400 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Roosevelt Soil

Typical profile

Surface layer:
0 to 14 inches—grayish brown and brown gravelly loam

Subsoil:
14 to 28 inches—pale brown gravelly sandy loam

Bedrock:
28 to 32 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate

Soaplake Soil

Typical profile

Surface layer:
0 to 10 inches—dark grayish brown loam

Upper part of subsoil:
10 to 14 inches—yellowish brown loam

Lower part of subsoil:
14 to 17 inches—light yellowish brown loam

Bedrock:
17 to 21 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Couleedam soils
- Soils that have bedrock at a depth of 20 to 60 inches and have more rock fragments throughout

- Soils that have bedrock at a depth of 4 to 10 inches
- Malott soils
- Farrell soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction.
- Depth to bedrock in the soils in this unit limits pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

401—Roosevelt-Soaplake-Rock outcrop complex, 30 to 65 percent slopes

Composition

Roosevelt soil and similar soils: 40 percent
Soaplake soil and similar soils: 30 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Roosevelt—shoulders and backslopes of hills; Soaplake—ridges, shoulders, and backslopes of hills
Parent material: Residuum and colluvium derived from granitic rock mixed with loess
Slope range: 30 to 65 percent
Elevation: 1,300 to 2,400 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Roosevelt Soil

Typical profile

Surface layer:
0 to 14 inches—grayish brown and brown gravelly loam

Subsoil:
14 to 28 inches—pale brown gravelly sandy loam

Bedrock:
28 to 32 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Soaplake Soil

Typical profile

Surface layer:
0 to 10 inches—dark grayish brown loam

Upper part of subsoil:
10 to 14 inches—yellowish brown loam

Lower part of subsoil:
14 to 17 inches—light yellowish brown loam

Bedrock:
17 to 21 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Couleedam soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Malott soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range

seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
• Depth to bedrock in the soils in this unit limits pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

402—Rubble land

This map unit consists of areas of unconsolidated rock debris, commonly known as talus, on backslopes and footslopes of hills, mountains, and plateaus. Slopes range from 20 to 90 percent. Rock fragments are angular, and they range in size from gravel to boulders.

This unit commonly is barren, but small areas where soil material has accumulated between rock fragments support a very sparse cover of shrubs, grasses, and forbs.

403—Rubble land-Rock outcrop complex

Composition

Rubble land: 60 percent
Rock outcrop: 25 percent
Contrasting inclusions: 15 percent

Rubble Land

Rubble land consists of areas of unconsolidated rock debris, commonly known as talus, on backslopes and footslopes of hills, mountains, and plateaus. Slopes range from 20 to 90 percent. Rock fragments are angular, and they range in size from gravel to boulders. Rubble land commonly is barren, but small areas where soil material has accumulated between rock fragments support a very sparse cover of shrubs, grasses, and forbs.

Rock Outcrop

Rock outcrop consists of areas where exposed bedrock covers 90 percent of the surface or more. It is mainly on ridges, shoulders, and backslopes of hills and mountains, but it also occurs as nearly vertical rock walls associated with basalt plateaus. Slopes range from 5 to 100 percent or more.

Contrasting Inclusions

• Soils that are very cobbly or very stony and support a variety of vegetation, depending on location.
• Soils that have bedrock at a depth of 4 to 20 inches and support a sparse cover of grasses, shrubs, and forbs. Scattered coniferous trees also occur in crevices in the rock where moisture and small amounts of soil have accumulated.

404—Rubble land-Rock outcrop-Haploxerolls, cobbly complex, 30 to 70 percent slopes

Composition

Rubble land: 40 percent
Rock outcrop: 25 percent
Haploxerolls, cobbly, and similar soils: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and escarpments of basalt plateaus (fig. 14)
Parent material: Colluvium derived from basalt and granitic rock mixed with loess
Slope range: 30 to 70 percent
Elevation: 1,600 to 2,500 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Rubble Land

Rubble land consists of areas of unconsolidated basalt and granitic rock debris, commonly known as talus, on backslopes of hills and escarpments of plateaus. Rock fragments are angular, and they range in size from gravel to boulders. Rubble land commonly is barren, but small areas where soil material has accumulated between rock fragments support a very sparse cover of shrubs, grasses, and forbs.

Rock Outcrop

Rock outcrop consists of areas where exposed basalt and granitic rock cover 90 percent of the surface or more. It is mainly on backslopes of hills, but it also occurs as nearly vertical rock walls associated with basalt plateau escarpments. Rock outcrop commonly is barren, but a sparse cover of stunted coniferous trees, shrubs, grasses, and forbs is in some crevices.

Haploxerolls, Cobbly

Reference profile

Surface layer:
0 to 16 inches—brown very cobbly silt loam

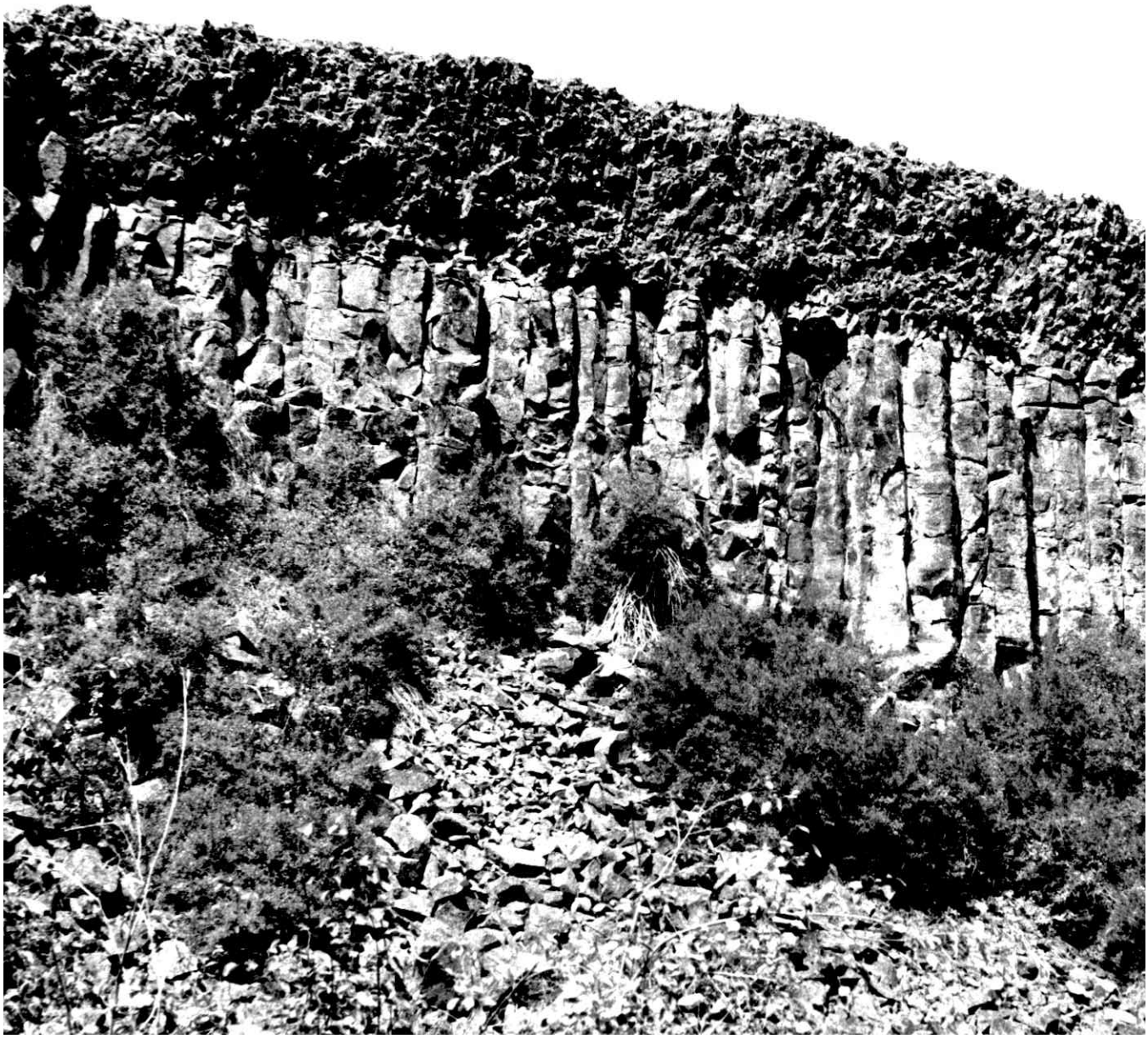


Figure 14.—Area of Rubble land-Rock outcrop-Haploxerolls, cobbly complex, 30 to 70 percent slopes. Rubble land and Haploxerolls are in foreground, and columnar basalt Rock outcrop is in background.

Substratum:
16 to 60 inches—fragmental basalt rock fragments

Soil properties and qualities

Depth class: Moderately deep to very deep (20 to 80 inches to bedrock)
Drainage class: Well drained to excessively drained
Permeability: Moderate to rapid
Available water capacity: Moderate
Potential rooting depth: 20 to 60 inches or more
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Swakane soils
- Conconully soils

Major Uses

Limited livestock grazing, recreation, watershed, and wildlife habitat

405—Sacheen loamy sand, dry, 20 to 40 percent slopes

Composition

Sacheen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Kames and terrace escarpments
Parent material: Sandy glacial outwash
Slope range: 20 to 40 percent
Elevation: 1,700 to 4,600 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—dark grayish brown and grayish brown loamy sand

Upper part of substratum:
8 to 25 inches—brown and pale brown loamy sand

Lower part of substratum:
25 to 60 inches—light brownish gray sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Karamin and Torboy soils
- Wapal soils
- Scrabblers soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: None

406—Sacheen loamy sand, dry, 40 to 70 percent slopes

Composition

Sacheen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Sandy glacial outwash
Slope range: 40 to 70 percent
Elevation: 1,700 to 4,300 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 8 inches—dark grayish brown and grayish brown loamy sand

Upper part of substratum:
8 to 25 inches—brown and pale brown loamy sand

Lower part of substratum:
25 to 60 inches—light brownish gray sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid

Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Karamin and Torboy soils
- Wapal soils
- Scrabblers soils
- Goddard soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Steepness of slope

407—Sacheen loamy fine sand, dry, 0 to 20 percent slopes

Composition

Sacheen soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and kames
Parent material: Sandy glacial outwash
Slope range: 0 to 20 percent
Elevation: 1,700 to 3,500 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 4 inches—dark grayish brown loamy fine sand

Upper part of substratum:
4 to 20 inches—pale brown loamy sand

Lower part of substratum:
20 to 60 inches—light gray gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Karamin and Torboy soils
- Wapal soils
- Scrabblers soils
- Goddard soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by droughtiness, wind erosion, and fast infiltration.

408—Sanpoil silt loam, 0 to 2 percent slopes

Composition

Sanpoil soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Flood plains and low stream terraces

Parent material: Recent alluvium
Slope range: 0 to 2 percent
Elevation: 1,600 to 3,800 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Upper part of surface layer:
0 to 12 inches—mottled, dark grayish brown silt loam

Lower part of surface layer:
12 to 28 inches—mottled, dark grayish brown loam

Upper part of substratum:
28 to 41 inches—mottled, brown and grayish brown fine sandy loam

Lower part of substratum:
41 to 60 inches—multicolored very gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Poorly drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Very slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in November through September (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in March through June

Contrasting Inclusions

- Boesel and Cubcreek soils
- Sanpoil soils, ponded
- Aquic Xerofluvents

Major Uses

Nonirrigated hay and pasture, livestock grazing, wildlife habitat, wetland wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable during periods when the soil is dry; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen, paper birch, and thinleaf alder—readily; Douglas-fir and western larch—periodically
Limitation for planting: Seasonal high water table

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wetness.

409—Sanpoil silt loam, ponded, 0 to 2 percent slopes

Composition

Sanpoil soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Flood plains and low stream terraces
Parent material: Recent alluvium
Slope range: 0 to 2 percent
Elevation: 2,500 to 3,800 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Upper part of surface layer:
0 to 20 inches—mottled, dark gray and dark grayish brown silt loam

Lower part of surface layer:
20 to 28 inches—mottled, grayish brown loam

Upper part of substratum:
28 to 34 inches—mottled, brown gravelly loam

Middle part of substratum:
34 to 45 inches—mottled, pale brown gravelly sandy loam

Lower part of substratum:
45 to 60 inches—mottled, very pale brown very gravelly coarse sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Permeability: Moderate over rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Ponded for long periods in February through June

Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in January through December (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in March through June

Contrasting Inclusions

- Boesel and Cubcreek soils
- Histosols, ponded
- Borosaprists that formed in organic material
- Aquic Xerofluvents

Major Uses

Nonirrigated hay and pasture, livestock grazing, wildlife habitat, wetland wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

- Because the soil in this unit has a seasonal ponded water table and is saturated in summer and fall, logging generally is feasible only when the soil is frozen.

Silviculture

Potential for natural regeneration: Quaking aspen, paper birch, and thinleaf alder—periodically
Limitation for planting: Seasonal ponded water table

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wetness.

410—Scala very fine sandy loam, 0 to 5 percent slopes

Composition

Scala soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Sandy glacial outwash mixed with volcanic ash and loess
Slope range: 0 to 5 percent
Elevation: 1,400 to 2,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 6 inches—grayish brown very fine sandy loam

Upper part of subsoil:
6 to 28 inches—pale brown very fine sandy loam

Lower part of subsoil:
28 to 60 inches—light brownish gray very fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: High
Potential rooting depth: More than 60 inches
Runoff: Very slow or slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Bisbee soils
- Cedonia and Hunters soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wind erosion.

411—Sclome silty clay loam, 0 to 3 percent slopes

Composition

Sclome soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Valley flats
Parent material: Alluvium over volcanic ash and valley fill
Slope range: 0 to 3 percent
Elevation: 2,400 to 2,700 feet
Average annual precipitation: 18 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Surface layer:
0 to 13 inches—very dark gray silty clay loam

Subsoil:
13 to 18 inches—grayish brown and pale brown silt loam

Buried surface layer:
18 to 28 inches—grayish brown and light brownish gray clay loam

Buried subsoil:
28 to 50 inches—mottled, light brownish gray and light gray sandy loam

Substratum:
50 to 60 inches—mottled, light gray silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Poorly drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight
Water table: Present in February through June (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, brief periods in March through May

Contrasting Inclusions

- Soils that are very poorly drained
- Brushcreek and Friedlander soils
- Soils that are moderately well drained
- Ret soils

Major Uses

Livestock grazing, timber production, nonirrigated hay and pasture, wildlife habitat, wetland wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine, Douglas-fir, and western larch—periodically
Limitation for planting: High clay content

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wetness.

412—Scoap silt loam, 5 to 20 percent slopes

Composition

Scoap soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Alluvial fans and toeslopes of hills and mountains
Parent material: Colluvium, glacial till, and slope alluvium derived from volcanic and metamorphic rock mixed with volcanic ash and loess
Slope range: 5 to 20 percent
Elevation: 1,600 to 3,600 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 3 inches—dark grayish brown silt loam

Lower part of surface layer:
3 to 12 inches—dark grayish brown gravelly loam

Upper part of subsoil:
12 to 25 inches—brown very gravelly loam

Lower part of subsoil:
25 to 36 inches—yellowish brown very gravelly loam

Substratum:
36 to 60 inches—light yellowish brown very gravelly loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Inkler soils
- Wellscreek soils
- Nevine soils
- Republic soils
- Lostcreek soils
- Aquic Xerofluvents and Ret soils

Major Uses

Timber production, livestock grazing, nonirrigated cropland, nonirrigated hay and pasture, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

413—Scoap gravelly loam, 20 to 40 percent slopes

Composition

Scoap soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Colluvium and glacial till derived from volcanic and metamorphic rock mixed with volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 1,600 to 4,200 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 14 inches—dark brown gravelly loam

Upper part of subsoil:
14 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 36 inches—pale brown very gravelly loam

Substratum:
36 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate to severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Inkler soils
- Oxerine and Thout soils
- Nevine soils
- Republic soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

414—Scoap gravelly loam, 40 to 65 percent slopes

Composition

Scoap soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and glacial till derived from volcanic and metamorphic rock mixed with volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 1,600 to 4,200 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 14 inches—dark brown gravelly loam

Upper part of subsoil:
14 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 36 inches—pale brown very gravelly loam

Substratum:
36 to 60 inches—very pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Inkler soils
- Oxerine and Thout soils
- Nevine soils
- Republic soils
- Soils that have a very stony surface
- Rock outcrop
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

415—Scoap-Rock outcrop complex, 20 to 40 percent slopes

Composition

Scoap soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Colluvium and glacial till derived from volcanic and metamorphic rock mixed with volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 1,800 to 4,800 feet
Average annual precipitation: 18 to 22 inches

Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Scoap Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 14 inches—dark brown gravelly loam

Upper part of subsoil:
14 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 36 inches—pale brown very gravelly loam

Substratum:
36 to 60 inches—very pale brown very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Rhyodacite, phyllite, schist, slate, and graywacke

Contrasting Inclusions

- Inkler soils
- Oxerine and Thout soils
- Nevine soils
- Republic soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

416—Scoap-Rock outcrop complex, 40 to 65 percent slopes

Composition

Scoap soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and glacial till derived from volcanic and metamorphic rock mixed with volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 1,800 to 4,800 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Scoap Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 14 inches—dark brown gravelly loam

Upper part of subsoil:
14 to 22 inches—brown gravelly loam

Lower part of subsoil:
22 to 36 inches—pale brown very gravelly loam

Substratum:
36 to 60 inches—very pale brown very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Rhyodacite, phyllite, schist, slate, and graywacke

Contrasting Inclusions

- Inkler soils
- Oxerine and Thout soils
- Nevine soils
- Republic soils
- Soils that have a very stony surface
- Rubble land

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

417—Scrabblers silt loam, dry, 0 to 20 percent slopes

Composition

Scrabblers soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces, terrace escarpments, and toeslopes of hills and mountains
Parent material: Mantle of volcanic ash over sandy glacial outwash
Slope range: 0 to 20 percent
Elevation: 2,600 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—yellowish brown silt loam

Subsoil:
3 to 11 inches—light yellowish brown silt loam

Upper part of substratum:
11 to 24 inches—pale brown gravelly sandy loam

Lower part of substratum:
24 to 60 inches—pale brown and brown gravelly loamy coarse sand and gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Martella soils
- Newbell soils
- Kiehl soils
- Apex, Aits, and Stapaloop soils

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch, lodgepole pine, and ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and droughtiness.

418—Scrabblers silt loam, dry, 20 to 40 percent slopes

Composition

Scrabblers soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments and toeslopes and footslopes of hills and mountains
Parent material: Mantle of volcanic ash over sandy glacial outwash
Slope range: 20 to 40 percent
Elevation: 2,600 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 3 inches—yellowish brown silt loam

Subsoil:
3 to 11 inches—light yellowish brown silt loam

Upper part of substratum:
11 to 24 inches—pale brown gravelly sandy loam

Lower part of substratum:
24 to 60 inches—pale brown and brown gravelly loamy coarse sand and gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe

Contrasting Inclusions

- Martella soils
- Newbell soils
- Kiehl soils
- Apex, Aits, and Stapaloop soils that are sandy loam throughout the substratum

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch, lodgepole pine, and ponderosa pine—periodically
Limitations for planting: None

419—Scrabblers loam, warm, 0 to 20 percent slopes

Composition

Scrabblers soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces, terrace escarpments, and toeslopes of hills and mountains
Parent material: Mantle of volcanic ash over sandy glacial outwash
Slope range: 0 to 20 percent
Elevation: 2,600 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 5 inches—brown loam

Subsoil:
5 to 13 inches—pale brown and light yellowish brown loam

Upper part of substratum:
13 to 20 inches—light gray sandy loam

Lower part of substratum:
20 to 60 inches—light gray gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid

Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Kiehl soils
- Stepstone soils
- Nevine soils
- Apex and Stapaloop soils
- Louploup soils

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and droughtiness.

420—Scrabblers loam, warm, 20 to 40 percent slopes

Composition

Scrabblers soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments and toeslopes and footslopes of hills and mountains
Parent material: Mantle of volcanic ash over sandy glacial outwash
Slope range: 20 to 40 percent
Elevation: 2,600 to 4,600 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 5 inches—brown loam

Subsoil:
5 to 13 inches—pale brown and light yellowish brown loam

Upper part of substratum:
13 to 20 inches—light gray sandy loam

Lower part of substratum:
20 to 60 inches—light gray gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Kiehl soils
- Stepstone soils
- Nevine soils
- Apex and Stapaloop soils
- Louploup soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—readily; western larch—periodically
Limitations for planting: None

421—Sitdown gravelly loam, 40 to 70 percent slopes

Composition

Sitdown soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains, and terrace escarpments
Parent material: Mantle of volcanic ash over glacial outwash
Slope range: 40 to 70 percent
Elevation: 2,800 to 4,600 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 2.5 inches thick

Surface layer:
0 to 4 inches—brown gravelly loam

Subsoil:
4 to 13 inches—pale brown gravelly loam

Upper part of substratum:
13 to 29 inches—pale brown very gravelly loamy sand

Lower part of substratum:
29 to 60 inches—light brownish gray very gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderate over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Parmenter soils
- Manley soils
- Torboy soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western larch, lodgepole pine, and subalpine fir—readily; Douglas-fir and Engelmann spruce—periodically
Limitation for planting: Steepness of slope

422—Skaha loamy sand, 0 to 10 percent slopes

Composition

Skaha soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash
Slope range: 0 to 10 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 7 inches—pale brown loamy sand

Upper part of substratum:
7 to 19 inches—light yellowish brown gravelly loamy sand

Middle part of substratum:
19 to 35 inches—pale brown very gravelly coarse sand

Lower part of substratum:
35 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches

Runoff: Very slow or slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony or very stony surface
- Quincy and Winchester soils
- Beverly soils
- Cashmont soils
- Cashmere soils
- Aeneas, Pogue, and Strat soils

Major Uses

Irrigated hay and pasture, irrigated orchards, livestock grazing, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

423—Skaha gravelly loamy sand, 0 to 10 percent slopes

Composition

Skaha soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash
Slope range: 0 to 10 percent
Elevation: 800 to 1,600 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 8 inches—brown gravelly loamy sand

Upper part of substratum:
8 to 18 inches—yellowish brown and light yellowish brown very gravelly loamy sand

Lower part of substratum:
18 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Very slow or slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Soils that have a stony or very stony surface
- Quincy and Winchester soils
- Beverly soils
- Cashmont soils
- Cashmere soils
- Aeneas, Pogue, and Strat soils

Major Uses

Livestock grazing, irrigated hay and pasture, irrigated orchards, building site development, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

424—Skaha extremely gravelly loamy sand, 30 to 65 percent slopes

Composition

Skaha soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash
Slope range: 30 to 65 percent
Elevation: 800 to 1,800 feet

Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 10 inches—brown extremely gravelly loamy sand

Upper part of substratum:
10 to 18 inches—pale brown gravelly loamy sand

Middle part of substratum:
18 to 24 inches—light gray very gravelly coarse sand

Lower part of substratum:
24 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Quincy and Winchester soils
- Pogue and Strat soils
- Peshastin soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This unit is very gravelly, which results in seepage and limits the potential for ponds.
- This unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.
- This unit is limited by the restricted available soil moisture. Seeding is not recommended.

425—Skaha very stony sandy loam, 5 to 30 percent slopes

Composition

Skaha soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash
Slope range: 5 to 30 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Surface layer:
0 to 7 inches—brown very stony sandy loam

Substratum:
7 to 60 inches—multicolored extremely gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Quincy and Winchester soils
- Pogue and Strat soils
- Peshastin soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too permeable for successful pond

installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, large stones, and droughtiness.

426—Skaha very stony sandy loam, 30 to 65 percent slopes

Composition

Skaha soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash
Slope range: 30 to 65 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Surface layer:
0 to 7 inches—brown very stony sandy loam

Substratum:
7 to 60 inches—multicolored extremely gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Quincy and Winchester soils
- Pogue and Strat soils
- Peshastin soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

427—Skaha-Rock outcrop complex, 30 to 65 percent slopes

Composition

Skaha soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash
Slope range: 30 to 65 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 3 to 15 percent

Skaha Soil

Typical profile

Surface layer:
0 to 7 inches—brown very stony sandy loam

Substratum:
7 to 60 inches—multicolored extremely gravelly loamy coarse sand

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Moderately rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Couleedam and Soaplake soils
- Roosevelt soils that have bedrock at a depth of 20 to 40 inches
- Quincy and Winchester soils
- Pogue and Strat soils
- Peshastin soils
- Rubble land

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

428—Skanid gravelly sandy loam, 5 to 20 percent slopes

Composition

Skanid soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, summits, and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 1,900 to 4,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—dark grayish brown gravelly sandy loam

Subsoil:
9 to 14 inches—brown very gravelly coarse sandy loam

Bedrock:
14 to 24 inches—highly weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Spokane soils
- Soils that have a stony or very stony surface
- Swakane soils
- Vanbrunt soils
- Soils that are sandy below the surface layer
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

429—Skanid gravelly sandy loam, 20 to 40 percent slopes

Composition

Skanid soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,900 to 4,200 feet

Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—dark grayish brown gravelly sandy loam

Subsoil:
9 to 14 inches—brown very gravelly coarse sandy loam

Bedrock:
14 to 24 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Spokane soils
- Swakane soils
- Vanbrunt soils
- Mineral soils
- Soils that have a stony or very stony surface
- Soils that are sandy below the surface layer
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

430—Skanid gravelly sandy loam, 40 to 65 percent slopes

Composition

Skanid soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,900 to 4,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—dark grayish brown gravelly sandy loam

Subsoil:
9 to 14 inches—brown very gravelly coarse sandy loam

Bedrock:
14 to 24 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Spokane soils
- Swakane soils
- Vanbrunt soils

- Mineral soils
- Soils that are sandy below the surface layer
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

431—Skanid gravelly sandy loam, warm, 5 to 20 percent slopes

Composition

Skanid soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, summits, and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 1,700 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—brown gravelly sandy loam

Substratum:
11 to 18 inches—brown very gravelly coarse sandy loam

Bedrock:
18 to 28 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Spokane soils
- Swakane soils
- Vanbrunt soils
- Soils that have a very stony surface
- Soils that are sandy below the surface layer
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

432—Skanid gravelly sandy loam, warm, 20 to 40 percent slopes

Composition

Skanid soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of hills and mountains

Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,700 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—brown gravelly sandy loam

Substratum:
11 to 18 inches—brown very gravelly coarse sandy loam

Bedrock:
18 to 28 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Spokane soils
- Vanbrunt soils
- Swakane soils
- Soils that have a very stony surface
- Soils that are sandy below the surface layer
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

433—Skanid gravelly sandy loam, warm, 40 to 65 percent slopes

Composition

Skanid soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,700 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—brown gravelly sandy loam

Substratum:
11 to 18 inches—brown very gravelly coarse sandy loam

Bedrock:
18 to 28 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Spokane soils

- Vanbrunt soils
- Swakane soils
- Soils that have a very stony surface
- Soils that are sandy below the surface layer
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

434—Skanid-Rock outcrop complex, 20 to 40 percent slopes

Composition

Skanid soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders and backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,900 to 4,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Skanid Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—dark grayish brown gravelly sandy loam

Subsoil:
9 to 14 inches—brown very gravelly coarse sandy loam

Bedrock:
14 to 24 inches—weathered granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Spokane soils
- Vanbrunt soils
- Swakane soils
- Soils that have a very stony surface
- Soils that are sandy below the surface layer

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

435—Skanid-Rock outcrop complex, 40 to 65 percent slopes

Composition

Skanid soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,900 to 4,200 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Skanid Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—dark grayish brown gravelly sandy loam

Subsoil:
9 to 14 inches—brown very gravelly coarse sandy loam

Bedrock:
14 to 24 inches—weathered granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Spokane soils
- Vanbrunt soils
- Swakane soils
- Mineral soils
- Soils that have a very stony surface
- Soils that are sandy below the surface layer

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

436—Skanid, warm-Rock outcrop complex, 40 to 65 percent slopes

Composition

Skanid soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock mixed with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,700 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Skanid Soil

Typical profile

Organic mat on surface: 2.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—brown gravelly sandy loam

Substratum:
11 to 18 inches—brown very gravelly coarse sandy loam

Bedrock:
18 to 28 inches—weathered granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Spokane soils
- Swakane soils
- Vanbrunt soils
- Soils that have a very stony surface
- Soils that are sandy below the surface layer
- Whitestone soils that are very deep

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

437—Spens very stony loamy sand, dry, 20 to 40 percent slopes

Composition

Spens soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terrace escarpments and kames
Parent material: Glacial outwash
Slope range: 20 to 40 percent
Elevation: 1,300 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 3 inches—grayish brown very stony loamy sand

Upper part of substratum:
3 to 15 inches—light brownish gray gravelly loamy sand

Lower part of substratum:
15 to 60 inches—multicolored very cobbly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Very low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Dart and Ewall soils
- Springdale soils
- Soils that do not have stones in the surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

438—Spens very stony loamy sand, dry, 40 to 65 percent slopes

Composition

Spens soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terrace escarpments and kames
Parent material: Glacial outwash
Slope range: 40 to 65 percent
Elevation: 1,300 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Stones cover 3 to 15 percent

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 3 inches—grayish brown very stony loamy sand

Upper part of substratum:
3 to 15 inches—light brownish gray gravelly loamy sand

Lower part of substratum:
15 to 60 inches—multicolored very cobbly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Rapid
Available water capacity: Very low
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Contrasting Inclusions

- Dart and Ewall soils
- Springdale soils
- Soils that do not have stones in the surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

439—Spokane loam, 5 to 20 percent slopes

Composition

Spokane soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges, summits, and toeslopes of hills and mountains
Parent material: Loess and volcanic ash over residuum and colluvium derived from granitic rock
Slope range: 5 to 20 percent
Elevation: 1,800 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 19 inches—brown gravelly loam

Lower part of subsoil:
19 to 25 inches—light yellowish brown gravelly loam

Bedrock:
25 to 35 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low

Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Skanid soils
- Vanbrunt and Northstar soils
- Centralpeak soils
- Dinkelman soils
- Soils that are sandy below the surface layer
- Georgecreek soils
- Mineral soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, rooting depth, and droughtiness.

440—Spokane loam, 20 to 40 percent slopes

Composition

Spokane soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders, backslopes, and footslopes of hills and mountains
Parent material: Loess and volcanic ash over residuum and colluvium derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 1,800 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 19 inches—brown gravelly loam

Lower part of subsoil:
19 to 25 inches—light yellowish brown gravelly loam

Bedrock:
25 to 35 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe

Contrasting Inclusions

- Skanid soils
- Vanbrunt and Northstar soils
- Centralpeak soils
- Dinkelman soils
- Soils that are sandy below the surface layer
- Georgecreek soils
- Mineral soils
- Soils that are very deep and have more rock fragments
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: None

441—Spokane loam, 40 to 65 percent slopes

Composition

Spokane soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Loess and volcanic ash over colluvium and residuum derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 1,800 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 19 inches—brown gravelly loam

Lower part of subsoil:
19 to 25 inches—light yellowish brown gravelly loam

Bedrock:
25 to 35 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Skanid soils
- Vanbrunt and Northstar soils
- Centralpeak soils
- Dinkelman soils
- Soils that are sandy below the surface layer
- Mineral soils
- Soils that are very deep and have more rock fragments
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Steepness of slope

442—Spokane loam, warm, 20 to 40 percent slopes

Composition

Spokane soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders, backslopes, and footslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 2,000 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Upper part of surface layer:
0 to 4 inches—dark grayish brown loam

Middle part of surface layer:
4 to 9 inches—dark brown loam

Lower part of surface layer:
9 to 12 inches—brown sandy loam

Upper part of subsoil:
12 to 22 inches—yellowish brown sandy loam

Lower part of subsoil:
22 to 30 inches—yellowish brown gravelly coarse sandy loam

Substratum:
30 to 33 inches—very pale brown gravelly loamy coarse sand

Bedrock:
33 to 43 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Skanid and Tyee soils
- Vanbrunt soils
- Ginnis soils
- Hellgate soils
- Whitestone soils
- Soils that have a very stony surface
- Georgecreek soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

443—Spokane loam, warm, 40 to 65 percent slopes

Composition

Spokane soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 2,000 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 0.5 inch thick

Upper part of surface layer:
0 to 4 inches—dark grayish brown loam

Middle part of surface layer:
4 to 9 inches—dark brown loam

Lower part of surface layer:
9 to 12 inches—brown sandy loam

Upper part of subsoil:
12 to 22 inches—yellowish brown sandy loam

Lower part of subsoil:
22 to 30 inches—yellowish brown gravelly coarse sandy loam

Substratum:
30 to 33 inches—very pale brown gravelly loamy coarse sand

Bedrock:
33 to 43 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none

Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Skanid and Tyee soils
- Vanbrunt soils
- Ginnis soils
- Hellgate soils
- Whitestone soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Steepness of slope

444—Spokane-Rock outcrop complex, 5 to 20 percent slopes

Composition

Spokane soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges and summits of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 2,200 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Spokane Soil

Typical profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 19 inches—brown gravelly loam

Lower part of subsoil:
19 to 25 inches—light yellowish brown gravelly loam

Bedrock:
25 to 35 inches—weathered granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Skanid soils
- Vanbrunt and Northstar soils
- Centralpeak soils
- Dinkelman soils
- Soils that are sandy below the surface layer
- Georgecreek soils
- Mineral soils
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Rock outcrop

445—Spokane-Rock outcrop complex, 20 to 40 percent slopes

Composition

Spokane soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders, backslopes, and footslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 2,200 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Spokane Soil

Typical profile

Organic mat on surface: 3 inches thick

Surface layer:
0 to 10 inches—grayish brown loam

Upper part of subsoil:
10 to 19 inches—brown gravelly loam

Lower part of subsoil:
19 to 25 inches—light yellowish brown gravelly loam

Bedrock:
25 to 35 inches—weathered granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Skanid soils
- Vanbrunt and Northstar soils
- Centralpeak soils
- Dinkelman soils
- Soils that are sandy below the surface layer
- Georgecreek soils
- Mineral soils
- Soils that are very deep and have more rock fragments
- Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Rock outcrop

446—Spokane, warm-Skanid, warm complex, 5 to 20 percent slopes

Composition

Spokane soil and similar soils: 60 percent
Skanid soil and similar soils: 25 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Summits, ridges, and shoulders of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 1,800 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Spokane

Organic mat on surface: 0.5 inch thick

Upper part of surface layer:
0 to 4 inches—dark grayish brown loam

Middle part of surface layer:
4 to 9 inches—dark brown loam

Lower part of surface layer:
9 to 12 inches—brown sandy loam

Upper part of subsoil:
12 to 22 inches—yellowish brown sandy loam

Lower part of subsoil:
22 to 30 inches—yellowish brown gravelly coarse sandy loam

Substratum:
30 to 33 inches—very pale brown gravelly loamy coarse sand

Bedrock:
33 to 43 inches—weathered granitic rock

Skanid

Organic mat on surface: 2.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—brown gravelly sandy loam

Substratum:
11 to 18 inches—brown very gravelly coarse sandy loam

Bedrock:
18 to 28 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Spokane—moderately deep (20 to 40 inches to bedrock); Skanid—shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Spokane—moderate; Skanid—moderately rapid
Available water capacity: Spokane—low; Skanid—very low
Potential rooting depth: Spokane—20 to 40 inches; Skanid—10 to 20 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight

Contrasting Inclusions

- Vanbrunt and Northstar soils
- Swakane soils
- Soils that are sandy below the surface layer
- Georgecreek soils
- Ginnis and Tyee soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Spokane—none; Skanid—rock fragments in the soil

447—Spokane, warm-Skanid, warm complex, 20 to 40 percent slopes

Composition

Spokane soil and similar soils: 60 percent
Skanid soil and similar soils: 25 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes, backslopes, and shoulders of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,800 to 3,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Spokane

Organic mat on surface: 0.5 inch thick

Upper part of surface layer:
0 to 4 inches—dark grayish brown loam

Middle part of surface layer:
4 to 9 inches—dark brown loam

Lower part of surface layer:
9 to 12 inches—brown sandy loam

Upper part of subsoil:
12 to 22 inches—yellowish brown sandy loam

Lower part of subsoil:
22 to 30 inches—yellowish brown gravelly coarse sandy loam

Substratum:
30 to 33 inches—very pale brown gravelly loamy coarse sand

Bedrock:
33 to 43 inches—weathered granitic rock

Skanid

Organic mat on surface: 2.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—brown gravelly sandy loam

Substratum:
11 to 18 inches—brown very gravelly coarse sandy loam

Bedrock:
18 to 28 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Spokane—moderately deep (20 to 40 inches to bedrock); Skanid—shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Spokane—moderate; Skanid—moderately rapid
Available water capacity: Spokane—low; Skanid—very low
Potential rooting depth: Spokane—20 to 40 inches; Skanid—10 to 20 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Contrasting Inclusions

- Vanbrunt and Northstar soils
- Swakane soils
- Soils that are sandy below the surface layer
- Georgecreek soils
- Ginnis and Tyee soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Spokane—none; Skanid—rock fragments in the soil

448—Spokane, warm-Skanid, warm complex, 40 to 65 percent slopes

Composition

Spokane soil and similar soils: 60 percent
Skanid soil and similar soils: 25 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,800 to 4,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Spokane

Organic mat on surface: 0.5 inch thick

Upper part of surface layer:
0 to 4 inches—dark grayish brown loam

Middle part of surface layer:
4 to 9 inches—dark brown loam

Lower part of surface layer:
9 to 12 inches—brown sandy loam

Upper part of subsoil:
12 to 22 inches—yellowish brown sandy loam

Lower part of subsoil:
22 to 30 inches—yellowish brown gravelly coarse sandy loam

Substratum:
30 to 33 inches—very pale brown gravelly loamy coarse sand

Bedrock:
33 to 43 inches—weathered granitic rock

Skanid

Organic mat on surface: 2.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—brown gravelly sandy loam

Substratum:
11 to 18 inches—brown very gravelly coarse sandy loam

Bedrock:
18 to 28 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Spokane—moderately deep (20 to 40 inches to bedrock); Skanid—shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Spokane—moderate; Skanid—moderately rapid
Available water capacity: Spokane—low; Skanid—very low
Potential rooting depth: Spokane—20 to 40 inches; Skanid—10 to 20 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Vanbrunt and Northstar soils
- Swakane soils
- Whitestone soils
- Soils that are sandy below the surface layer
- Ginnis and Tyee soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Spokane—steepness of slope; Skanid—rock fragments in the soil and steepness of slope

449—Springdale gravelly sandy loam, 0 to 15 percent slopes

Composition

Springdale soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash with a component of loess and volcanic ash
Slope range: 0 to 15 percent
Elevation: 1,400 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly sandy loam

Subsoil:
4 to 11 inches—pale brown gravelly sandy loam

Upper part of substratum:
11 to 17 inches—very pale brown gravelly sand

Lower part of substratum:
17 to 60 inches—multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: More than 60 inches
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow

Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Bisbee and Dart soils
- Hallcreek soils
- Spens soils
- Garrison soils
- Phoebe soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and building site development

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

450—Springdale gravelly sandy loam, 15 to 30 percent slopes

Composition

Springdale soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash with a component of loess and volcanic ash
Slope range: 15 to 30 percent
Elevation: 1,400 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly sandy loam

Subsoil:
4 to 11 inches—pale brown gravelly sandy loam

Upper part of substratum:
11 to 17 inches—very pale brown gravelly sand

Lower part of substratum:
17 to 60 inches—multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Bisbee and Dart soils
- Spens soils
- Garrison soils
- Phoebe soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

451—Springdale gravelly sandy loam, 30 to 65 percent slopes

Composition

Springdale soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,400 to 3,500 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly sandy loam

Subsoil:
4 to 11 inches—pale brown gravelly sandy loam

Upper part of substratum:
11 to 17 inches—very pale brown gravelly sand

Lower part of substratum:
17 to 60 inches—multicolored extremely gravelly sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Spens soils
- Bisbee and Dart soils
- Phoebe soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

452—Stapaloop fine sandy loam, 0 to 20 percent slopes

Composition

Stapaloop soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces, and toeslopes and footslopes of hills and mountains
Parent material: Glaciofluvial deposits and glacial till with a component of loess and volcanic ash
Slope range: 0 to 20 percent
Elevation: 2,700 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—light brownish gray fine sandy loam

Subsoil:
7 to 22 inches—light gray fine sandy loam

Upper part of substratum:
22 to 31 inches—light gray fine sandy loam

Lower part of substratum:
31 to 60 inches—white very fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Torboy soils

- Scrabblers soils
- Louploup soils
- Nevine soils
- Merkel soils
- Sacheen soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, recreation, and building site development

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and ponderosa pine—readily
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

453—Stapaloop fine sandy loam, 20 to 40 percent slopes

Composition

Stapaloop soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of hills and mountains
Parent material: Glaciofluvial deposits and glacial till with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 2,700 to 4,800 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 7 inches—light brownish gray fine sandy loam

Subsoil:
7 to 22 inches—light gray fine sandy loam

Upper part of substratum:
22 to 31 inches—light gray fine sandy loam

Lower part of substratum:
31 to 60 inches—white very fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Torboy soils
- Scrabblers soils
- Louploup soils
- Nevine soils
- Merkel soils
- Sacheen soils that are sandy throughout

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir, western larch, and ponderosa pine—readily
Limitations for planting: None

454—Stapaloop fine sandy loam, dry, 0 to 20 percent slopes

Composition

Stapaloop soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terraces, and toeslopes of hills and mountains

Parent material: Glaciofluvial deposits with a component of loess and volcanic ash
Slope range: 0 to 20 percent
Elevation: 1,900 to 3,100 feet
Average annual precipitation: 16 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 2 inches—grayish brown fine sandy loam

Subsoil:
2 to 17 inches—light brownish gray and pale brown fine sandy loam

Upper part of substratum:
17 to 38 inches—pale brown and very pale brown sandy loam

Lower part of substratum:
38 to 60 inches—very pale brown loamy fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight to severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Torboy soils
- Scrabblers soils
- Hudnut soils
- Phoebe soils
- Merkel soils
- Sacheen soils
- Louploup soils

Major Uses

Timber production, livestock grazing, watershed, wildlife habitat, recreation, and building site development

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir and western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind erosion.

455—Stepstone loam, 5 to 20 percent slopes

Composition

Stepstone soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of mountains
Parent material: Mantle of volcanic ash 14 to 30 inches thick over glacial till derived from granitic rock
Slope range: 5 to 20 percent
Elevation: 2,500 to 5,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 0.75 inch thick

Surface layer:
0 to 0.5 inch—light brownish gray loam

Upper part of subsoil:
0.5 inch to 18 inches—yellowish brown and light yellowish brown loam

Lower part of subsoil:
18 to 22 inches—very pale brown gravelly sandy loam

Upper part of substratum:
22 to 34 inches—light gray very stony loamy sand

Lower part of substratum:
34 to 60 inches—white extremely stony loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—moderate or severe; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Nevine soils
- Manley and Resner soils
- Mineral soils
- Soils that have a very stony or bouldery surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and western larch—readily; ponderosa pine and lodgepole pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

456—Stepstone loam, 20 to 40 percent slopes

Composition

Stepstone soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Mantle of volcanic ash 14 to 30 inches thick over glacial till derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 2,500 to 5,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 0.75 inch thick

Surface layer:
0 to 0.5 inch—light brownish gray loam

Upper part of subsoil:
0.5 inch to 18 inches—yellowish brown and light yellowish brown loam

Lower part of subsoil:
18 to 22 inches—very pale brown gravelly sandy loam

Upper part of substratum:
22 to 34 inches—light gray very stony loamy sand

Lower part of substratum:
34 to 60 inches—white extremely stony loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Nevine soils
- Manley and Resner soils
- Mineral soils
- Soils that have a very stony or bouldery surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and western larch—readily; ponderosa pine and lodgepole pine—periodically
Limitations for planting: None

457—Stepstone loam, 40 to 65 percent slopes

Composition

Stepstone soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash 14 to 30 inches thick over glacial till derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 2,500 to 5,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 0.75 inch thick

Surface layer:
0 to 0.5 inch—light brownish gray loam

Upper part of subsoil:
0.5 inch to 18 inches—yellowish brown and light yellowish brown loam

Lower part of subsoil:
18 to 22 inches—very pale brown gravelly sandy loam

Upper part of substratum:
22 to 34 inches—light gray very stony loamy sand

Lower part of substratum:
34 to 60 inches—white extremely stony loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Nevine soils
- Manley and Resner soils
- Mineral soils
- Soils that have a very stony or bouldery surface
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and western larch—readily; ponderosa pine and lodgepole pine—periodically
Limitation for planting: Steepness of slope

458—Stepstone bouldery loam, 20 to 40 percent slopes

Composition

Stepstone soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of mountains
Parent material: Mantle of volcanic ash 14 to 30 inches thick over glacial till derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 3,800 to 5,000 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days
Rock fragments on surface: Boulders cover 0.1 to 3.0 percent

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 9 inches—brown bouldery loam

Subsoil:
9 to 29 inches—yellowish brown cobbly loam

Substratum:
29 to 60 inches—pale brown very gravelly loamy coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Merkel soils
- Mineral soils
- Nevine soils
- Manley and Resner soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and western larch—readily; ponderosa pine and lodgepole pine—periodically
Limitations for planting: None

459—Stevens silt loam, 0 to 8 percent slopes

Composition

Stevens soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and summits of hills
Parent material: Glacial till with a component of loess and volcanic ash
Slope range: 0 to 8 percent
Elevation: 1,600 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 22 inches—dark grayish brown silt loam

Upper part of subsoil:
22 to 30 inches—brown silt loam

Lower part of subsoil:
30 to 38 inches—light brownish gray gravelly loam

Substratum:
38 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches over dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Very high
Effective rooting depth: 20 to 40 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Garrison soils
- Borgeau soils
- Goldlake soils
- Donavan soils

Major Uses

Nonirrigated cropland, nonirrigated and irrigated hay and pasture, building site development, timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and

tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth.

460—Stevens silt loam, 8 to 15 percent slopes

Composition

Stevens soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and toeslopes of hills
Parent material: Glacial till with a component of loess and volcanic ash
Slope range: 8 to 15 percent
Elevation: 1,600 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 22 inches—dark grayish brown silt loam

Upper part of subsoil:
22 to 30 inches—brown silt loam

Lower part of subsoil:
30 to 38 inches—light brownish gray gravelly loam

Substratum:
38 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Very high
Effective rooting depth: 20 to 40 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Borgeau soils
• Glenrose soils
• Donavan soils
• Soils that are fine sandy loam throughout

Major Uses

Nonirrigated cropland, nonirrigated hay and pasture (fig. 15), irrigated orchards at elevations of less than 1,800 feet, building site development, timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth.

461—Stevens silt loam, 15 to 30 percent slopes

Composition

Stevens soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of hills
Parent material: Glacial till with a component of loess and volcanic ash
Slope range: 15 to 30 percent
Elevation: 1,600 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 22 inches—dark grayish brown silt loam

Figure 15.—Area of Stevens silt loam, 8 to 15 percent slopes, used for hay production. Borgeau, Raisio, and Rufus soils are in background.

Upper part of subsoil:
22 to 30 inches—brown silt loam

Lower part of subsoil:
30 to 38 inches—light brownish gray gravelly loam

Substratum:
38 to 60 inches—light brownish gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: Very high
Effective rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Borgeau soils
- Glenrose soils

- Donavan soils
- Soils that have a dark surface layer less than 7 inches thick
- Soils that have a stony surface

Similar Inclusions

- Soils that have a gravelly silt loam surface layer

Major Uses

Nonirrigated hay and pasture, timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth.

462—Stevens gravelly silt loam, 30 to 65 percent slopes

Composition

Stevens soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills
Parent material: Glacial till with a component of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 1,600 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Surface layer:
0 to 15 inches—very dark grayish brown gravelly silt loam

Subsoil:
15 to 31 inches—dark brown gravelly loam

Substratum:
31 to 60 inches—brown dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderately rapid over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Borgeau soils
- Donavan soils
- Dehart soils
- Rock outcrop
- Soils that have a very stony surface

Major Use

Timber production and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitation for planting: Steepness of slope

463—Strat gravelly fine sandy loam, 0 to 10 percent slopes

Composition

Strat soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash with loess in the upper part
Slope range: 0 to 10 percent

Elevation: 1,000 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Surface layer:
0 to 11 inches—brown gravelly fine sandy loam

Subsoil:
11 to 24 inches—yellowish brown very gravelly fine sandy loam

Upper part of substratum:
24 to 31 inches—light brownish gray, calcareous extremely gravelly loamy sand

Middle part of substratum:
31 to 39 inches—light brownish gray, calcareous extremely gravelly sand

Lower part of substratum:
39 to 60 inches—multicolored, calcareous extremely cobbly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Skaha soils
- Peshastin soils
- Pogue soils
- Soils that have a very stony or very cobbly surface

Major Uses

Livestock grazing, irrigated hay and pasture, building site development, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by droughtiness and steepness of slope.

464—Stubblefield stony loam, 3 to 25 percent slopes

Composition

Stubblefield soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Ground moraines and glaciated hills
Parent material: Glacial till derived from basalt with some loess
Slope range: 3 to 25 percent
Elevation: 1,200 to 1,950 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 9 inches—grayish brown stony loam

Upper part of subsoil:
9 to 24 inches—pale brown very gravelly loam

Lower part of subsoil:
24 to 28 inches—light brownish gray hardpan

Substratum:
28 to 60 inches—light brownish gray dense glacial till that crushes to very cobbly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate above the hardpan and slow below the hardpan
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Strat soils

- Cashmont soils
- Malott and Timentwa soils
- Soils that have a very stony or extremely stony surface

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by rooting depth, large stones, steepness of slope, and water erosion.

465—Swakane cobbly loam, 25 to 65 percent slopes

Composition

Swakane soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Ridges and backslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 25 to 65 percent
Elevation: 1,500 to 3,000 feet
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 6 inches—grayish brown cobbly loam

Lower part of surface layer:
6 to 11 inches—grayish brown very gravelly loam

Substratum:
11 to 14 inches—brown extremely gravelly sandy loam

Bedrock:
14 to 18 inches—granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Conconully and Donavan soils
- Vanbrunt and Wynhoff soils
- Ginnis and Spokane soils
- Pole soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

466—Swakane-Rock outcrop complex, 5 to 30 percent slopes

Composition

Swakane soil and similar soils: 50 percent
Rock outcrop: 30 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Ridges and shoulders of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 5 to 30 percent
Elevation: 1,500 to 3,000 feet
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Rock fragments on surface: Swakane—stones cover 3 to 15 percent

Swakane Soil

Typical profile

Upper part of surface layer:
0 to 7 inches—dark brown very stony loam

Lower part of surface layer:
7 to 11 inches—brown very gravelly loam

Subsoil:
11 to 14 inches—yellowish brown very cobbly loam

Bedrock:
14 to 18 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Conconully and Donavan soils
- Vanbrunt and Wynhoff soils
- Ginnis and Spokane soils
- Pole soils
- Soils that have bedrock at a depth of 4 to 10 inches

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

467—Swakane-Rock outcrop complex, 30 to 70 percent slopes

Composition

Swakane soil and similar soils: 45 percent
Rock outcrop: 35 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders and backslopes of hills and mountains
Parent material: Residuum and colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 30 to 70 percent
Elevation: 1,500 to 3,000 feet
Average annual precipitation: 12 to 16 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Swakane—stones cover 3 to 15 percent

Swakane Soil

Typical profile

Upper part of surface layer:
0 to 7 inches—dark brown very stony loam

Lower part of surface layer:
7 to 11 inches—brown very gravelly loam

Subsoil:
11 to 14 inches—yellowish brown very cobbly loam

Bedrock:
14 to 18 inches—granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Conconully and Donavan soils
- Vanbrunt and Wynhoff soils
- Ginnis and Spokane soils
- Pole soils

• Soils that have bedrock at a depth of 4 to 10 inches

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
• The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

468—Swipkin silt loam, 0 to 5 percent slopes

Composition

Swipkin soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Lake plains and terraces
Parent material: Glacial lake sediment with a component of loess and volcanic ash
Slope range: 0 to 5 percent
Elevation: 1,450 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 16 inches—dark grayish brown and brown silt loam

Subsoil:
16 to 21 inches—light yellowish brown silt loam

Substratum:
21 to 60 inches—light brownish gray silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

• Cedonia soils
• Scala soils
• Phoebe soils
• Donavan soils
• Bernhill soils

Major Uses

Nonirrigated cropland, nonirrigated hay and pasture, timber production, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by water erosion.

469—Swipkin silt loam, 5 to 10 percent slopes

Composition

Swipkin soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Lake plains and terraces
Parent material: Glacial lake sediment with a component of loess and volcanic ash
Slope range: 5 to 10 percent
Elevation: 1,450 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 16 inches—dark grayish brown and brown silt loam

Subsoil:
16 to 21 inches—light yellowish brown silt loam

Substratum:
21 to 60 inches—light brownish gray silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate; forestland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Cedonia soils
- Scala soils
- Phoebe soils
- Donavan soils
- Bernhill soils

Major Uses

Nonirrigated cropland, nonirrigated hay and pasture, timber production, livestock grazing, building site development, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

470—Thout gravelly loam, dry, 20 to 40 percent slopes

Composition

Thout soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Residuum and colluvium derived from rhyodacite and quartz latite with some glacial till and a minor amount of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,200 to 4,200 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly loam

Subsoil:
4 to 26 inches—pale brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Baldknob soils
- Inkler and Scoap soils
- Centralpeak soils
- Northstar soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

471—Thout, dry-Rock outcrop complex, 8 to 20 percent slopes

Composition

Thout soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Shoulders and ridges of hills and mountains
Parent material: Residuum and colluvium derived from rhyodacite and quartz latite with some glacial till and a minor amount of volcanic ash and loess
Slope range: 8 to 20 percent
Elevation: 2,200 to 4,200 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Thout Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly loam

Subsoil:
4 to 26 inches—pale brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Baldknob soils
- Inkler and Scoap soils
- Centralpeak soils
- Northstar soils
- Soils that have a very stony surface

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

472—Thout, dry-Rock outcrop complex, 20 to 40 percent slopes

Composition

Thout soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and shoulders of hills and mountains
Parent material: Residuum and colluvium derived from rhyodacite and quartz latite with some glacial till and a minor amount of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,200 to 4,200 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Thout Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly loam

Subsoil:
4 to 26 inches—pale brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Baldknob soils
- Inkler and Scoap soils
- Centralpeak soils
- Northstar soils
- Soils that have a very stony surface

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

473—Thout, dry-Rock outcrop complex, 40 to 65 percent slopes

Composition

Thout soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Residuum and colluvium derived from rhyodacite and quartz latite with some glacial till and a minor amount of volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 2,200 to 4,200 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Thout Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—grayish brown gravelly loam

Subsoil:
4 to 26 inches—pale brown very gravelly loam

Bedrock:
26 to 30 inches—rhyodacite

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—severe or very severe

Rock Outcrop

Kind of rock: Rhyodacite and quartz latite

Contrasting Inclusions

- Baldknob soils
- Inkler and Scoap soils
- Centralpeak soils
- Northstar soils

- Soils that have a very stony surface
- Rubble land

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

474—Timentwa loam, 0 to 8 percent slopes

Composition

Timentwa soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Glacial till plains on basalt plateaus
Parent material: Glacial till derived mainly from basalt with a mantle of loess and volcanic ash
Slope range: 0 to 8 percent
Elevation: 2,200 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 18 inches—dark grayish brown and grayish brown loam

Upper part of subsoil:
18 to 28 inches—brown gravelly loam

Middle part of subsoil:
28 to 41 inches—pale brown gravelly loam

Lower part of subsoil:
41 to 56 inches—light brownish gray and pale brown, calcareous cobbly sandy loam

Substratum:
56 to 60 inches—light brownish gray hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have a bouldery or stony surface
- Emdent soils
- Picard soils
- Bakeoven soils
- Duleylake soils
- Colockum soils
- Soils that have a hardpan at a depth of 20 to 40 inches
- Haley soils

Major Uses

Livestock grazing, nonirrigated cropland, nonirrigated hay and pasture (fig. 16), recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

475—Timentwa loam, 8 to 15 percent slopes

Composition

Timentwa soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Glacial till plains on basalt plateaus
Parent material: Glacial till derived mainly from basalt with a mantle of loess and volcanic ash
Slope range: 8 to 15 percent

Figure 16.—Winter wheat stubble with glacial erratic boulders in an area of Timentwa loam, 0 to 8 percent slopes.

Elevation: 2,200 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Surface layer:
0 to 18 inches—dark grayish brown and grayish brown loam

Upper part of subsoil:
18 to 28 inches—brown gravelly loam

Middle part of subsoil:
28 to 41 inches—pale brown gravelly loam

Lower part of subsoil:
41 to 56 inches—light brownish gray and pale brown, calcareous cobbly sandy loam

Substratum:
56 to 60 inches—light brownish gray hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Medium

Hazard of water erosion: Cropland—moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have a bouldery or stony surface
- Picard soils
- Emdent soils
- Bakeoven soils
- Duleylake soils
- Colockum soils
- Soils that have a hardpan at a depth of 20 to 40 inches
- Haley soils

Major Uses

Nonirrigated cropland, livestock grazing, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

476—Timentwa very bouldery loam, 0 to 30 percent slopes

Composition

Timentwa soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Glacial till plains and moraines on basalt plateaus
Parent material: Glacial till derived mainly from basalt with a mantle of loess and volcanic ash
Slope range: 0 to 30 percent
Elevation: 2,200 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Boulders and stones cover 3 to 15 percent

Typical Profile

Upper part of surface layer:
0 to 12 inches—dark brown very bouldery loam

Upper part of subsoil:
12 to 20 inches—yellowish brown gravelly loam

Middle part of subsoil:
20 to 37 inches—light brownish gray gravelly loam

Lower part of subsoil:
37 to 52 inches—pale brown, calcareous gravelly sandy loam

Substratum:
52 to 60 inches—light brown hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Picard soils
- Emdent soils
- Bakeoven soils
- Colockum soils
- Soils that have a hardpan at a depth of 20 to 40 inches
- Haley soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by large stones, steepness of slope, and water erosion.

477—Timentwa loams complex, 30 to 65 percent slopes

Composition

Timentwa soil, south slopes, and similar soils: 50 percent

Timentwa soil, north slopes, and similar soils: 35 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Glacial till plain escarpments, and footslopes and backslopes of moraines
Parent material: Glacial till derived mainly from basalt with a mantle of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 2,200 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Timentwa, south slopes

Surface layer:
0 to 18 inches—dark grayish brown and grayish brown loam

Upper part of subsoil:
18 to 28 inches—brown gravelly loam

Middle part of subsoil:
28 to 41 inches—pale brown gravelly loam

Lower part of subsoil:
41 to 56 inches—light brownish gray and pale brown, calcareous cobbly sandy loam

Substratum:
56 to 60 inches—light brownish gray hardpan

Timentwa, north slopes

Surface layer:
0 to 20 inches—dark grayish brown and dark brown loam

Upper part of subsoil:
20 to 29 inches—brown loam

Middle part of subsoil:
29 to 37 inches—yellowish brown loam

Lower part of the subsoil:
37 to 42 inches—very pale brown, calcareous cobbly sandy loam

Substratum:
42 to 60 inches—brown and very pale brown hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Rapid or very rapid
Hazard of water erosion: Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have a very bouldery or very stony surface
- Bakeoven soils
- Colockum soils
- Soils that have a hardpan at a depth of 20 to 40 inches
- Badge soils
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

478—Timentwa very bouldery loams complex, 30 to 65 percent slopes

Composition

Timentwa soil, south slopes, and similar soils: 50 percent
Timentwa soil, north slopes, and similar soils: 35 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes and backslopes of dissected glacial till plains and moraines on basalt plateaus
Parent material: Glacial till derived mainly from basalt with a mantle of loess and volcanic ash
Slope range: 30 to 65 percent
Elevation: 2,200 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Boulders and stones cover 3 to 15 percent

Typical Profile

Timentwa, south slopes

Surface layer:
0 to 8 inches—dark brown very bouldery loam

Upper part of subsoil:
8 to 20 inches—yellowish brown gravelly loam

Middle part of subsoil:
20 to 37 inches—light brownish gray gravelly loam

Lower part of subsoil:
37 to 52 inches—pale brown, calcareous gravelly sandy loam

Substratum:
52 to 60 inches—light brown hardpan

Timentwa, north slopes

Upper part of surface layer:
0 to 4 inches—dark gray very bouldery loam

Lower part of surface layer:
4 to 26 inches—dark gray and dark grayish brown loam

Upper part of subsoil:
26 to 36 inches—brown loam

Middle part of subsoil:
36 to 42 inches—grayish brown gravelly loam

Lower part of subsoil:
42 to 56 inches—light brownish gray, calcareous gravelly sandy loam

Substratum:
56 to 60 inches—grayish brown hardpan

Soil Properties and Qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Bakeoven soils
- Colockum soils
- Soils that have a hardpan at a depth of 20 to 40 inches
- Badge soils
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

479—Timentwa-Bakeoven-Rock outcrop complex, 0 to 30 percent slopes

Composition

Timentwa soil and similar soils: 50 percent
Bakeoven soil and similar soils: 20 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Timentwa—glacial till plains and moraines on basalt plateaus; Bakeoven—glacially scoured areas on basalt plateaus
Parent material: Timentwa—glacial till derived mainly from basalt with a mantle of loess and volcanic ash; Bakeoven—colluvium and residuum derived from basalt with some loess
Slope range: Timentwa—0 to 25 percent; Bakeoven—0 to 30 percent
Elevation: 2,200 to 2,900 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Timentwa Soil

Typical profile

Surface layer:
0 to 18 inches—dark grayish brown and grayish brown loam

Upper part of subsoil:
18 to 28 inches—brown gravelly loam

Middle part of subsoil:
28 to 41 inches—pale brown gravelly loam

Lower part of subsoil:
41 to 56 inches—light brownish gray and pale brown, calcareous cobbly sandy loam

Substratum:
56 to 60 inches—light brownish gray hardpan

Soil properties and qualities

Depth class: Deep (40 to 60 inches to a hardpan)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: 40 to 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Bakeoven Soil

Typical profile

Surface layer:
0 to 3 inches—brown very cobbly silt loam

Subsoil:
3 to 7 inches—brown very cobbly silt loam

Bedrock:
7 to 11 inches—basalt

Soil properties and qualities

Depth class: Very shallow (4 to 10 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low
Potential rooting depth: 4 to 10 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Basalt

Contrasting Inclusions

- Soils that are moderately well drained
- Emdent soils
- Soils that have a very bouldery surface

Major Uses

Livestock grazing, recreation, watershed, wildlife habitat, and building site development

Use and Management

Livestock grazing

- The Bakeoven soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The Bakeoven soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

480—Togo silt loam, 5 to 20 percent slopes

Composition

Togo soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Toeslopes and footslopes of mountains
Parent material: Mantle of volcanic ash 14 to 20 inches thick over residuum and colluvium derived from granitic rock
Slope range: 5 to 20 percent
Elevation: 4,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—yellowish brown silt loam

Upper part of subsoil:
4 to 15 inches—yellowish brown silt loam

Lower part of subsoil:
15 to 28 inches—light yellowish brown very cobbly sandy loam

Substratum:
28 to 60 inches—light yellowish brown very cobbly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—November through May; more than 3 feet—December through April
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Buhrig and Moses soils
- Manley soils
- Codylake soils
- Ohscow soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western larch and lodgepole pine—readily; subalpine fir and Engelmann spruce—periodically
Limitations for planting: None

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

481—Togo silt loam, 20 to 40 percent slopes

Composition

Togo soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of mountains
Parent material: Mantle of volcanic ash 14 to 20 inches thick over residuum and colluvium derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 4,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—yellowish brown silt loam

Upper part of subsoil:
4 to 15 inches—yellowish brown silt loam

Lower part of subsoil:
15 to 28 inches—light yellowish brown very cobbly sandy loam

Substratum:
28 to 60 inches—light yellowish brown very cobbly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through May; more than 3 feet—December through April
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Buhrig and Moses soils
- Manley soils
- Codylake soils
- Ohscow soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western larch and lodgepole pine—readily; subalpine fir and Engelmann spruce—periodically
Limitations for planting: None

482—Togo silt loam, 40 to 65 percent slopes

Composition

Togo soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash 14 to 20 inches thick over residuum and colluvium derived from granitic rock
Slope range: 40 to 65 percent
Elevation: 4,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—yellowish brown silt loam

Upper part of subsoil:
4 to 15 inches—yellowish brown silt loam

Lower part of subsoil:
15 to 28 inches—light yellowish brown very cobbly sandy loam

Substratum:
28 to 60 inches—light yellowish brown very cobbly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—November through May; more than 3 feet—December through April
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Buhrig and Moses soils
- Manley soils
- Codylake soils
- Ohscow soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Western larch and lodgepole pine—readily; subalpine fir and Engelmann spruce—periodically
Limitation for planting: Steepness of slope

483—Togo silt loam, warm, 20 to 40 percent slopes

Composition

Togo soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Mantle of volcanic ash 14 to 20 inches thick over residuum and colluvium derived from granitic rock
Slope range: 20 to 40 percent
Elevation: 4,000 to 5,500 feet
Average annual precipitation: 20 to 25 inches
Average annual air temperature: 40 to 42 degrees F
Frost-free period: 90 to 110 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 5 inches—yellowish brown silt loam

Upper part of subsoil:
5 to 16 inches—yellowish brown silt loam

Lower part of subsoil:
16 to 29 inches—pale brown very gravelly sandy loam

Substratum:
29 to 60 inches—pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Buhrig and Moses soils
- Manley soils
- Codylake soils
- Ohscow soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Lodgepole pine—readily; subalpine fir, Douglas-fir, and western larch—periodically
Limitations for planting: None

484—Togo-Rock outcrop complex, 5 to 30 percent slopes

Composition

Togo soil and similar soils: 65 percent
Rock outcrop: 15 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes and footslopes of mountains
Parent material: Mantle of volcanic ash 14 to 20 inches thick over residuum and colluvium derived from granitic rock
Slope range: 5 to 30 percent
Elevation: 4,000 to 6,000 feet
Average annual precipitation: 20 to 30 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days
Rock fragments on surface: Togo—stones cover 3 to 15 percent

Togo Soil

Typical profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 6 inches—brown very stony silt loam

Upper part of subsoil:
6 to 16 inches—yellowish brown cobbly silt loam

Lower part of subsoil:
16 to 30 inches—pale brown very gravelly sandy loam

Substratum:
30 to 60 inches—pale brown very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—November through May; more than 3 feet—December through April
Hazard of water erosion: Forestland—slight or moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Buhrig and Moses soils
- Manley soils
- Codylake soils
- Ohscow soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable
- Rock outcrop and stones on the surface restrict the movement of ground equipment.

Silviculture

Potential for natural regeneration: Western larch and lodgepole pine—readily; subalpine fir and Engelmann spruce—periodically
Limitations for planting: Rock outcrop and very stony surface layer

485—Torboy fine sandy loam, 0 to 20 percent slopes

Composition

Torboy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and toeslopes of mountains
Parent material: Glacial outwash with a component of loess and volcanic ash in the upper part
Slope range: 0 to 20 percent

Elevation: 2,800 to 3,900 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—pale brown fine sandy loam

Subsoil:
4 to 16 inches—pale brown fine sandy loam

Upper part of substratum:
16 to 20 inches—light gray gravelly loamy sand

Middle part of substratum:
20 to 33 inches—very pale brown gravelly sand

Lower part of substratum:
33 to 60 inches—light gray gravelly fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Scrabblers soils
- Stapaloop soils
- Wapal soils
- Goddard and Kiehl soils
- Sacheen soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and lodgepole pine—readily; Douglas-fir and western larch—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wind erosion, droughtiness, and steepness of slope.

486—Torboy fine sandy loam, 20 to 40 percent slopes

Composition

Torboy soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments, and footslopes and backslopes of mountains
Parent material: Glacial outwash with a component of loess and volcanic ash in the upper part
Slope range: 20 to 40 percent
Elevation: 2,800 to 4,500 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 4 inches—pale brown fine sandy loam

Subsoil:
4 to 16 inches—pale brown fine sandy loam

Upper part of substratum:
16 to 20 inches—light gray gravelly loamy sand

Middle part of substratum:
20 to 33 inches—very pale brown gravelly sand

Lower part of substratum:
33 to 60 inches—light gray gravelly fine sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Wapal soils
- Stapaloop soils
- Scrabblers soils
- Goddard and Kiehl soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and lodgepole pine—readily; Douglas-fir and western larch—periodically

487—Torrifluventic Haploxerolls, 0 to 3 percent slopes

Composition

Torrifluventic Haploxerolls and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Stream terraces
Parent material: Alluvium
Slope range: 0 to 3 percent
Elevation: 800 to 2,000 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Reference Profile

Surface layer:
0 to 11 inches—gray, calcareous loamy coarse sand

Upper part of substratum:
11 to 26 inches—brown and pale brown, calcareous coarse sand

Lower part of substratum:
26 to 60 inches—light brownish gray and multicolored, stratified, calcareous silt loam to coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe
Frequency, duration, and period of flooding: Occasional, brief periods in February through May

Contrasting Inclusions

- Skaha soils
- Soils that have a stony or very stony surface
- Quincy soils
- Farrell and Cashmere soils

Major Uses

Livestock grazing, irrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this unit is used for irrigated crops, it is limited by droughtiness and fast infiltration.

488—Tunkcreek fine sandy loam, 5 to 20 percent slopes

Composition

Tunkcreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and toeslopes of mountains
Parent material: Glacial outwash with a mantle of volcanic ash and loess 14 to 20 inches thick
Slope range: 5 to 20 percent
Elevation: 3,500 to 4,600 feet
Average annual precipitation: 22 to 28 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 0.75 inch—light gray very fine sandy loam

Subsoil:
0.75 inch to 16 inches—light yellowish brown fine sandy loam

Upper part of substratum:
16 to 31 inches—light gray loamy sand

Lower part of substratum:
31 to 60 inches—light gray gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—slight or moderate

Contrasting Inclusions

- Manley and Resner soils
- Scrabblers and Torboy soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir, western larch, and lodgepole pine—readily; Douglas-fir and Engelmann spruce—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and wind and water erosion.

489—Tunkcreek fine sandy loam, 20 to 40 percent slopes

Composition

Tunkcreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes of mountains
Parent material: Glacial outwash with a mantle of volcanic ash and loess 14 to 20 inches thick
Slope range: 20 to 40 percent
Elevation: 3,500 to 4,600 feet
Average annual precipitation: 22 to 28 inches
Average annual air temperature: 39 to 41 degrees F
Frost-free period: 80 to 100 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 0.75 inch—light gray very fine sandy loam

Subsoil:
0.75 inch to 16 inches—light yellowish brown fine sandy loam

Upper part of substratum:
16 to 31 inches—light gray loamy sand

Lower part of substratum:
31 to 60 inches—light gray gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid over very rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—November through April; more than 3 feet—December through March
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Manley and Resner soils
- Scrabblers and Torboy soils
- Stapaloop soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Subalpine fir,

western larch, and lodgepole pine—readily; Douglas-fir and Engelmann spruce—periodically
Limitations for planting: None

490—Tyee gravelly loam, 5 to 30 percent slopes

Composition

Tyee soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Summits and shoulders of hills
Parent material: Residuum and colluvium derived from granitic rock with some loess
Slope range: 5 to 30 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly loam

Lower part of surface layer:
5 to 11 inches—brown gravelly loam

Subsoil:
11 to 17 inches—brown gravelly loam

Bedrock:
17 to 27 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Ginnis soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Swakane soils
- Morical soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

491—Tyee gravelly loam, 30 to 65 percent slopes

Composition

Tyee soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Mainly south-facing backslopes of hills
Parent material: Residuum and colluvium derived from granitic rock with some loess
Slope range: 30 to 65 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 3 inches—grayish brown gravelly loam

Lower part of surface layer:
3 to 13 inches—brown gravelly loam

Subsoil:
13 to 16 inches—pale brown gravelly loam

Bedrock:
16 to 26 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Ginnis soils

- Soils that have bedrock at a depth of 4 to 10 inches
- Swakane soils
- Morical soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

492—Tyee gravelly loam, 30 to 65 percent north slopes

Composition

Tyee soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Mainly north-facing backslopes of hills
Parent material: Colluvium and residuum derived from granitic rock with some loess
Slope range: 30 to 65 percent
Elevation: 2,000 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly loam

Lower part of surface layer:
5 to 11 inches—brown gravelly loam

Subsoil:
11 to 17 inches—brown gravelly loam

Bedrock:
17 to 27 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Ginnis soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Swakane soils
- Morical soils
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Livestock grazing, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This soil is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

493—Tyee-Morical-Tyee complex, 30 to 60 percent slopes

Composition

Tyee soil, north slopes, and similar soils: 30 percent
Morical soil and similar soils: 30 percent
Tyee soil, south slopes, and similar soils: 25 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Tyee—convex backslopes and shoulders of hills; Morical—linear and concave backslopes of hills
Parent material: Tyee—colluvium derived from granitic rock with some loess; Morical—residuum and colluvium derived from granitic rock with a component of loess and volcanic ash
Slope range: 30 to 60 percent
Elevation: 2,400 to 3,200 feet
Average annual precipitation: 12 to 15 inches

Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Tyee, north slopes

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly loam

Lower part of surface layer:
5 to 11 inches—brown gravelly loam

Subsoil:
11 to 17 inches—brown gravelly loam

Bedrock:
17 to 27 inches—weathered granitic rock

Morical

Surface layer:
0 to 17 inches—grayish brown silt loam

Upper part of subsoil:
17 to 28 inches—light yellowish brown silt loam

Lower part of subsoil:
28 to 33 inches—light yellowish brown gravelly loam

Bedrock:
33 to 43 inches—weathered granitic rock

Tyee, south slopes

Upper part of surface layer:
0 to 3 inches—grayish brown gravelly loam

Lower part of surface layer:
3 to 13 inches—brown gravelly loam

Subsoil:
13 to 16 inches—pale brown gravelly loam

Bedrock:
16 to 26 inches—weathered granitic rock

Soil Properties and Qualities

Depth class: Tyee—shallow (10 to 20 inches to bedrock); Morical—moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Tyee—low; Morical—moderately high
Potential rooting depth: Tyee—10 to 20 inches; Morical—20 to 40 inches
Runoff: Tyee—medium or rapid; Morical—rapid or very rapid
Hazard of water erosion (Tyee): Rangeland—moderate or severe
Hazard of water erosion (Morical): Rangeland—severe or very severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Soils that have bedrock at a depth of 4 to 10 inches
- Soils that have a very stony surface
- Rock outcrop

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soils in this unit are too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

494—Tyee-Rock outcrop complex, 8 to 30 percent slopes

Composition

Tyee soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Summits and shoulders of hills
Parent material: Residuum and colluvium derived from granitic rock with some loess
Slope range: 8 to 30 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Tyee Soil

Typical profile

Upper part of surface layer:
0 to 3 inches—grayish brown gravelly loam

Lower part of surface layer:
3 to 13 inches—brown gravelly loam

Subsoil:
13 to 16 inches—pale brown gravelly loam

Bedrock:
16 to 26 inches—weathered granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Ginnis soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Swakane soils
- Morical soils
- Soils that have a very stony surface

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

495—Tyee-Rock outcrop complex, 30 to 65 percent slopes

Composition

Tyee soil and similar soils: 60 percent
Rock outcrop: 20 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Mainly south-facing backslopes of hills
Parent material: Colluvium derived from granitic rock with some loess
Slope range: 30 to 65 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Tyee Soil

Typical profile

Upper part of surface layer:
0 to 3 inches—grayish brown gravelly loam

Lower part of surface layer:
3 to 13 inches—brown gravelly loam

Subsoil:
13 to 16 inches—pale brown gravelly loam

Bedrock:
16 to 26 inches—weathered granitic rock

Soil properties and qualities

Depth class: Shallow (10 to 20 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 10 to 20 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Ginnis soils
- Soils that have bedrock at a depth of 4 to 10 inches
- Swakane soils
- Morical soils
- Soils that have a very stony surface

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- The soil in this unit is too shallow for most uses. Fences require special designs, pipelines cannot be buried below the frostline, ponds are not feasible, and seeding and brush management are not practical.

496—Typic Haplaquolls, 0 to 2 percent slopes

Composition

Typic Haplaquolls and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Low terraces and flood plains
Parent material: Alluvium and glacial outwash
Slope range: 0 to 2 percent
Elevation: 740 to 800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Reference Profile

Surface layer:
0 to 8 inches—brown fine sandy loam

Subsoil:
8 to 24 inches—mottled, light brownish gray fine sandy loam

Substratum:
24 to 60 inches—mottled, light brownish gray fine sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Poorly drained
Permeability: Moderate to rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very slow
Hazard of water erosion: Cropland—none or slight; rangeland—none
Hazard of wind erosion (bare surface): Severe when the soils are dry
Water table: Present in December through August (see “Water Features” table)
Frequency, duration, and period of flooding: Occasional, long periods in January through June

Contrasting Inclusions

- Quincy soils
- Aeneas, Skaha, and Strat soils
- Monse soils
- Okanogan and Cashmere soils
- Ellisforde soils

Major Uses

Nonirrigated hay and pasture and wildlife habitat

Use and Management

Nonirrigated hay and pasture

- The soils in this unit are affected by a high water table that limits use of the soils at certain times of the year.

Irrigated cropland

- If the soils in this unit are used for irrigated crops, they are limited by wetness.

497—Typic Xerorthents-Typic Xerochrepts complex, 5 to 50 percent slopes

Composition

Typic Xerorthents and similar soils: 40 percent
Typic Xerochrepts and similar soils: 40 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Typic Xerorthents—unstable terrace escarpments and slopes associated with recent landslides; Typic Xerochrepts—unstable terrace escarpments and hummocky metastable slopes associated with landslides
Parent material: Glacial outwash, glaciofluvial material, glacial lake sediment, and mixed material from landslides and debris flows
Slope range: 5 to 50 percent
Elevation: 1,300 to 1,900 feet
Average annual precipitation: 15 to 17 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Reference Profile

Typic Xerorthents

Surface layer:
0 to 5 inches—dark grayish brown loam

Upper part of subsoil:
5 to 9 inches—grayish brown loam

Middle part of subsoil:
9 to 49 inches—light gray and pale yellow, calcareous gravelly sandy loam and sandy loam

Lower part of subsoil:
49 to 60 inches—mottled, light gray and white, calcareous silty clay loam

Typic Xerochrepts

Surface layer:
0 to 7 inches—grayish brown gravelly sandy loam

Upper part of subsoil:
7 to 22 inches—light brownish gray very gravelly coarse sandy loam

Middle part of subsoil:
22 to 31 inches—light gray, calcareous very gravelly loam

Lower part of subsoil:
31 to 60 inches—light brownish gray, calcareous silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Typic Xerorthents—well drained and somewhat excessively drained; Typic Xerochrepts—well drained
Permeability: Moderately slow
Available water capacity: Typic Xerorthents—moderate or moderately high; Typic Xerochrepts—moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Soils that have a very stony surface
- Soils in drainageways that have a colder soil temperature regime
- Soils that are moderately well drained or somewhat poorly drained

Major Uses

Livestock grazing, wildlife habitat, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically

Limitation for planting: Steepness of slope in some areas

498—Ultic Haploxerolls, 40 to 70 percent slopes

Composition

Ultic Haploxerolls and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Terrace escarpments that have dominantly north- and east-facing aspects
Parent material: Glacial outwash, glaciofluvial material, and glacial lake sediment that commonly are mixed or stratified
Slope range: 40 to 70 percent
Elevation: 1,400 to 2,800 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Reference Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 13 inches—grayish brown and brown gravelly loam

Subsoil:
13 to 28 inches—pale brown gravelly sandy loam

Upper part of substratum:
28 to 42 inches—light brownish gray gravelly sandy loam

Lower part of substratum:
42 to 60 inches—light brownish gray gravelly loamy sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained and somewhat excessively drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Soils that are sandy throughout

- Soils that have a very stony surface
- Soils in seep areas that are moderately well drained

Major Uses

Timber production, livestock grazing, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—readily; Douglas-fir—periodically
Limitation for planting: Steepness of slope

499—Uncas muck, 0 to 2 percent slopes

Composition

Uncas soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Backswamps and valley flats
Parent material: Alluvium derived dominantly from volcanic ash overlain by decomposed organic material
Slope range: 0 to 2 percent
Elevation: 1,900 to 2,600 feet
Average annual precipitation: 18 to 22 inches
Average annual air temperature: 42 to 45 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Upper part of surface layer:
0 to 7 inches—dark gray muck

Middle part of surface layer:
7 to 11 inches—gray silt loam

Lower part of surface layer:
11 to 21 inches—light gray silt loam

Upper part of substratum:
21 to 48 inches—white silt loam

Middle part of substratum:
48 to 52 inches—white very fine sandy loam

Lower part of substratum:
52 to 60 inches—light gray silt loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Permeability: Moderately slow
Available water capacity: Very high
Potential rooting depth: More than 60 inches
Runoff: None
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—none; forestland—none
Hazard of wind erosion (bare surface): None
Water table: Present in December through August (see “Water Features” table)
Frequency, duration, and period of flooding: Frequent, long periods in March through May

Contrasting Inclusions

- Soils that are poorly drained
- Soils that are somewhat poorly drained and formed in glacial lake sediment and alluvium

Major Uses

Nonirrigated hay and pasture, wetland wildlife habitat, watershed, livestock grazing, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable during the short periods when the soil is dry; cable yarding—suitable

Silviculture

Potential for natural regeneration: Quaking aspen and black cottonwood—readily
Limitations for planting: Periods of flooding

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by wetness.

500—Vanbrunt-Rock outcrop complex, 5 to 20 percent slopes

Composition

Vanbrunt soil and similar soils: 70 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Ridges and summits of hills and mountains
Parent material: Colluvium, residuum, and glacial till derived from granitic rock with a component of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 1,800 to 4,400 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Vanbrunt—stones and boulders cover 3 to 15 percent

Vanbrunt Soil

Typical profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 3 inches—brown very stony sandy loam

Lower part of surface layer:
3 to 10 inches—brown very gravelly sandy loam

Subsoil:
10 to 19 inches—light yellowish brown extremely cobbly sandy loam

Substratum:
19 to 25 inches—very pale brown very cobbly sandy loam

Bedrock:
25 to 29 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Slow
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—slight

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Skanid soils
- Swakane soils
- Spokane soils
- Whitestone soils

Major Uses

Livestock grazing, marginal timber production, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

501—Vanbrunt-Rock outcrop complex, 20 to 40 percent slopes

Composition

Vanbrunt soil and similar soils: 70 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Shoulders, backslopes, and footslopes of hills and mountains
Parent material: Colluvium, residuum, and glacial till derived from granitic rock with a component of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,800 to 4,400 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Vanbrunt—stones and boulders cover 3 to 15 percent

Vanbrunt Soil

Typical profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 3 inches—brown very stony sandy loam

Lower part of surface layer:
3 to 10 inches—brown very gravelly sandy loam

Subsoil:
10 to 19 inches—light yellowish brown extremely cobbly sandy loam

Substratum:
19 to 25 inches—very pale brown very cobbly sandy loam

Bedrock:
25 to 29 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Skanid soils
- Swakane soils
- Spokane soils
- Whitestone soils

Major Uses

Marginal timber production (fig. 17), wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

502—Vanbrunt-Rock outcrop complex, 40 to 65 percent slopes

Composition

Vanbrunt soil and similar soils: 55 percent
Rock outcrop: 30 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium, residuum, and glacial till derived from granitic rock with a component of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,800 to 4,000 feet
Average annual precipitation: 15 to 20 inches
Average annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Vanbrunt—stones and boulders cover 3 to 15 percent

Vanbrunt Soil

Typical profile

Organic mat on surface: 2 inches thick

Upper part of surface layer:
0 to 3 inches—brown very stony sandy loam

Lower part of surface layer:
3 to 10 inches—brown very gravelly sandy loam

Subsoil:
10 to 19 inches—light yellowish brown extremely cobbly sandy loam

Substratum:
19 to 25 inches—very pale brown very cobbly sandy loam

Bedrock:
25 to 29 inches—granitic rock

Soil properties and qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Very low
Potential rooting depth: 20 to 40 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Skanid soils
- Swakane soils

Figure 17.—Area of Vanbrunt-Rock outcrop complex, 20 to 40 percent slopes, that supports a ponderosa pine/antelope bitterbrush-Idaho fescue ecological site.

- Spokane soils
- Whitestone soils
- Rubble land

Major Uses

Marginal timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive

soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop, rock fragments in the soil, and steepness of slope

503—Wannacott silt loam, 0 to 8 percent slopes

Composition

Wannacott soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Undulating till plains
Parent material: Intermixed glacial lake sediment and glacial till with loess in the upper part
Slope range: 0 to 8 percent
Elevation: 2,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 10 inches—grayish brown silt loam

Lower part of surface layer:
10 to 15 inches—light yellowish brown silt loam

Upper part of subsoil:
15 to 22 inches—light brownish gray silt loam

Lower part of subsoil:
22 to 29 inches—light yellowish brown, calcareous silty clay loam

Upper part of substratum:
29 to 35 inches—light yellowish gray gravelly sandy loam

Lower part of substratum:
35 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Disautel soils
- Conconully soils
- Nespelem soils

Major Uses

Livestock grazing, nonirrigated cropland, building site development, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, rooting depth, and water erosion.

504—Wannacott silt loam, 8 to 15 percent slopes

Composition

Wannacott soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Undulating till plains
Parent material: Intermixed glacial lake sediment and glacial till with loess in the upper part
Slope range: 8 to 15 percent
Elevation: 2,200 to 2,700 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days

Typical Profile

Upper part of surface layer:
0 to 10 inches—grayish brown silt loam

Lower part of surface layer:
10 to 15 inches—light yellowish brown silt loam

Upper part of subsoil:
15 to 22 inches—light brownish gray silt loam

Lower part of subsoil:
22 to 29 inches—light yellowish brown, calcareous silty clay loam

Upper part of substratum:
29 to 35 inches—light brownish gray gravelly sandy loam

Lower part of substratum:
35 to 60 inches—light gray dense glacial till that crushes to gravelly sandy loam

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to dense glacial till)
Drainage class: Well drained
Permeability: Moderate over slow
Available water capacity: High
Effective rooting depth: 20 to 40 inches
Runoff: Medium
Hazard of water erosion: Cropland—moderate; rangeland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Disautel soils
- Conconully soils
- Nespelem soils

Major Uses

Livestock grazing, nonirrigated cropland, building site development, watershed, wildlife habitat, and recreation

Use and Management

Livestock grazing

- There are no significant limitations for management of this soil for this use.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and rooting depth.

505—Wapal gravelly sandy loam, 0 to 15 percent slopes

Composition

Wapal soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash with a component of volcanic ash and loess
Slope range: 0 to 15 percent
Elevation: 1,600 to 3,200 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Subsoil:
5 to 11 inches—yellowish brown gravelly sandy loam

Substratum:
11 to 60 inches—multicolored very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Goddard and Kiehl soils
- Parmenter soils
- Karamin and Torboy soils
- Merkel soils
- Soils that have a stony surface

Major Uses

Timber production, livestock grazing, nonirrigated hay and pasture, building site development, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

506—Wapal cobbly sandy loam, 0 to 15 percent slopes

Composition

Wapal soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces
Parent material: Glacial outwash with a component of volcanic ash and loess
Slope range: 0 to 15 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 7 inches—grayish brown cobbly sandy loam

Subsoil:
7 to 15 inches—brown cobbly sandy loam

Substratum:
15 to 60 inches—multicolored extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

• Goddard and Kiehl soils
• Parmenter soils
• Karamin and Torboy soils
• Merkel soils
• Soils that have a very stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

• If this soil is used for irrigated crops, it is limited by steepness of slope and droughtiness.

507—Wapal gravelly sandy loam, 15 to 30 percent slopes

Composition

Wapal soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terraces and terrace escarpments
Parent material: Glacial outwash with a component of volcanic ash and loess
Slope range: 15 to 30 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Subsoil:
5 to 11 inches—yellowish brown gravelly sandy loam

Substratum:
11 to 60 inches—multicolored very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Goddard and Kiehl soils
- Parmenter soils
- Karamin and Torboy soils
- Sacheen soils
- Merkel soils
- Soils that have a stony surface

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and droughtiness.

508—Wapal gravelly sandy loam, 30 to 65 percent slopes

Composition

Wapal soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash with a component of volcanic ash and loess
Slope range: 30 to 65 percent
Elevation: 1,600 to 3,500 feet
Average annual precipitation: 16 to 24 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 1.5 inches thick

Upper part of surface layer:
0 to 5 inches—dark grayish brown gravelly sandy loam

Lower part of surface layer:
5 to 11 inches—light brownish gray gravelly sandy loam

Substratum:
11 to 60 inches—pale brown very gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—none
Hazard of water erosion: Forestland—moderate or severe

Contrasting Inclusions

- Goddard and Kiehl soils
- Parmenter soils
- Karamin and Torboy soils
- Sacheen soils
- Merkel soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine and Douglas-fir—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

509—Wellscreek channery loam, 5 to 20 percent slopes

Composition

Wellscreek soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Fans, and toeslopes and footslopes of hills and mountains
Parent material: Colluvium derived from metasedimentary rock with a small amount of volcanic ash and loess
Slope range: 5 to 20 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 4 inches thick

Surface layer:
0 to 10 inches—dark brown channery loam

Subsoil:
10 to 24 inches—light yellowish brown very channery loam

Substratum:
24 to 60 inches—pale brown very channery loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate

Contrasting Inclusions

- Henneway soils
- Wilmont soils
- Oxerine soils

Major Uses

Timber production (fig. 18), livestock grazing, nonirrigated hay and pasture, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope and water erosion.

510—Wellscreek channery loam, 20 to 40 percent slopes

Composition

Wellscreek soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes and backslopes of hills and mountains
Parent material: Colluvium derived from metasedimentary rock with a small amount of volcanic ash and loess
Slope range: 20 to 40 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 4 inches thick

Surface layer:
0 to 10 inches—dark brown channery loam

Subsoil:
10 to 24 inches—light yellowish brown very channery loam

Figure 18.—Area of Wellscreek channery loam, 5 to 20 percent slopes, that supports ponderosa pine in the young forest successional stage. The ecological site is Douglas-fir/mallow ninebark.

Substratum:
24 to 60 inches—pale brown very channery loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe

Contrasting Inclusions

- Henneway soils

- Wilmont soils
- Oxerine soils

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

511—Wellscreek very channery loam, 40 to 65 percent slopes

Composition

Wellscreek soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium derived from metasedimentary rock with a small amount of volcanic ash and loess
Slope range: 40 to 65 percent
Elevation: 2,000 to 3,200 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 4 inches thick

Upper part of surface layer:
0 to 6 inches—dark grayish brown very channery loam

Lower part of surface layer:
6 to 14 inches—brown very channery loam

Upper part of subsoil:
14 to 26 inches—yellowish brown extremely cobbly silt loam

Lower part of subsoil:
26 to 42 inches—light yellowish brown extremely channery loam

Substratum:
42 to 60 inches—light yellowish brown extremely channery loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—severe or very severe

Contrasting Inclusions

- Henneway soils
- Wilmont soils
- Oxerine soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

512—Whitestone loam, 5 to 20 percent slopes

Composition

Whitestone soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Toeslopes and footslopes of hills and mountains
Parent material: Colluvium derived from granitic rock

and granitic glacial till with a small amount of loess and volcanic ash
Slope range: 5 to 20 percent
Elevation: 1,700 to 3,000 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Upper part of surface layer:
0 to 6 inches—grayish brown loam

Lower part of surface layer:
6 to 14 inches—brown gravelly sandy loam

Subsoil:
14 to 29 inches—pale brown very gravelly sandy loam

Substratum:
29 to 60 inches—light brownish gray very cobbly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight or moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Donavan and Hellgate soils
- Spokane soils
- Vanbrunt soils
- Soils that have a very stony surface
- Bearspring soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: None

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, and droughtiness.

513—Whitestone gravelly sandy loam, 20 to 40 percent slopes

Composition

Whitestone soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes and footslopes of hills and mountains
Parent material: Colluvium derived from granitic rock and granitic glacial till with a small amount of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,700 to 3,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 16 inches—grayish brown and brown gravelly sandy loam

Subsoil:
16 to 32 inches—pale brown very gravelly sandy loam

Substratum:
32 to 60 inches—pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—moderate or severe; forestland—moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Donavan and Hellgate soils
- Spokane soils
- Vanbrunt soils
- Swakane soils
- Soils that have a very stony surface
- Bearspring soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

514—Whitestone gravelly sandy loam, 40 to 65 percent slopes

Composition

Whitestone soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium derived from granitic rock and granitic glacial till with a small amount of loess and volcanic ash
Slope range: 40 to 65 percent
Elevation: 1,700 to 3,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Typical Profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 16 inches—grayish brown and brown gravelly sandy loam

Subsoil:
16 to 32 inches—pale brown very gravelly sandy loam

Substratum:
32 to 60 inches—pale brown very gravelly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—severe

Contrasting Inclusions

- Donavan and Hellgate soils
- Spokane soils
- Vanbrunt soils
- Swakane soils
- Soils that have a very stony surface
- Bearspring soils
- Rock outcrop

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock fragments in the soil and steepness of slope

515—Whitestone very stony sandy loam, 20 to 40 percent slopes

Composition

Whitestone soil and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes, backslopes, and toeslopes of hills and mountains
Parent material: Colluvium derived from granitic rock

and granitic glacial till with a small amount of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,700 to 3,700 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Stones and boulders cover 3 to 15 percent

Typical Profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 10 inches—grayish brown very stony sandy loam

Subsoil:
10 to 27 inches—pale brown very cobbly sandy loam

Substratum:
27 to 60 inches—light gray very cobbly sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Contrasting Inclusions

- Donavan and Hellgate soils
- Spokane soils
- Vanbrunt soils
- Swakane soils
- Bearspring soils
- Rock outcrop

Major Uses

Livestock grazing, timber production, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

516—Whitestone-Rock outcrop complex, 20 to 40 percent slopes

Composition

Whitestone soil and similar soils: 65 percent
Rock outcrop: 20 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Footslopes, backslopes, and shoulders of hills and mountains
Parent material: Colluvium derived from granitic rock and granitic glacial till with a small amount of loess and volcanic ash
Slope range: 20 to 40 percent
Elevation: 1,700 to 3,400 feet
Average annual precipitation: 15 to 18 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days

Whitestone Soil

Typical profile

Organic mat on surface: 1 inch thick

Surface layer:
0 to 16 inches—grayish brown and brown gravelly sandy loam

Subsoil:
16 to 32 inches—pale brown very gravelly sandy loam

Substratum:
32 to 60 inches—pale brown very gravelly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Forestland—moderate

Rock Outcrop

Kind of rock: Granitic rock

Contrasting Inclusions

- Donavan and Hellgate soils
- Spokane soils
- Vanbrunt soils
- Swakane soils
- Soils that have a very stony surface
- Bearspring soils

Major Uses

Timber production, livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitations for planting: Rock outcrop and rock fragments in the soil

517—Wilmont silt loam, 20 to 40 percent slopes

Composition

Wilmont soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Toe slopes, footslopes, and backslopes of hills and mountains
Parent material: Residuum and colluvium derived from metasedimentary rock with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 20 to 40 percent
Elevation: 2,200 to 3,300 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 12 inches—yellowish brown silt loam

Lower part of subsoil:
12 to 27 inches—light yellowish brown very channery sandy loam

Upper part of substratum:
27 to 47 inches—brown extremely channery loamy sand

Lower part of substratum:
47 to 60 inches—dark grayish brown extremely channery sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Oxerine soils
- Wellscreek soils
- Henneway soils
- Soils that do not have a mantle of volcanic ash

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitations for planting: None

518—Wilmont silt loam, 40 to 65 percent slopes

Composition

Wilmont soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Residuum and colluvium derived from metasedimentary rock with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 40 to 65 percent
Elevation: 2,200 to 3,300 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 5 inches—brown silt loam

Upper part of subsoil:
5 to 12 inches—yellowish brown silt loam

Lower part of subsoil:
12 to 27 inches—light yellowish brown very channery sandy loam

Upper part of substratum:
27 to 47 inches—brown extremely channery loamy sand

Lower part of substratum:
47 to 60 inches—dark grayish brown extremely channery sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderately high
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Oxerine soils
- Wellscreek soils
- Henneway soils
- Soils that do not have a mantle of volcanic ash

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir—readily; ponderosa pine and western larch—periodically
Limitation for planting: Steepness of slope

519—Wilmont silt loam, cool, 20 to 40 percent slopes

Composition

Wilmont soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: North-facing footslopes and backslopes of hills and mountains
Parent material: Residuum and colluvium derived from metasedimentary rock with a mantle of volcanic ash 7 to 14 inches thick
Slope range: 20 to 40 percent
Elevation: 2,200 to 3,300 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—brown silt loam

Upper part of subsoil:
4 to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 21 inches—light yellowish brown very channery loam

Upper part of substratum:
21 to 36 inches—light yellowish brown extremely channery loam

Lower part of substratum:
36 to 60 inches—light yellowish brown extremely channery sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Rapid or very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Cropland—severe or very severe; forestland—moderate or severe
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Hartill and Oxerine soils
- Wellscreek soils
- Henneway soils
- Soils that do not have a mantle of volcanic ash

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch—periodically
Limitations for planting: None

520—Wilmont silt loam, cool, 40 to 65 percent slopes

Composition

Wilmont soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: North-facing backslopes of hills and mountains
Parent material: Residuum and colluvium derived from metasedimentary rock with a mantle of volcanic ash
Slope range: 40 to 65 percent
Elevation: 2,200 to 3,300 feet
Average annual precipitation: 18 to 25 inches
Average annual air temperature: 41 to 43 degrees F
Frost-free period: 90 to 120 days

Typical Profile

Organic mat on surface: 2 inches thick

Surface layer:
0 to 4 inches—brown silt loam

Upper part of subsoil:
4 to 11 inches—light yellowish brown silt loam

Lower part of subsoil:
11 to 21 inches—light yellowish brown very channery loam

Upper part of substratum:
21 to 36 inches—light yellowish brown extremely channery loam

Lower part of substratum:
36 to 60 inches—light yellowish brown extremely channery sandy loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained
Permeability: Moderate over rapid
Available water capacity: Moderate
Potential rooting depth: More than 60 inches
Runoff: Very rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—very severe

Contrasting Inclusions

- Hartill and Oxerine soils
- Wellscreek soils
- Henneway soils
- Soils that do not have a mantle of volcanic ash

Major Uses

Timber production, livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion; cable yarding—suitable

Silviculture

Potential for natural regeneration: Douglas-fir and grand fir—readily; western larch—periodically
Limitations for planting: None

521—Winchester loamy coarse sand, 0 to 10 percent slopes

Composition

Winchester soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces and dunes
Parent material: Glacial outwash sand reworked by wind in some areas
Slope range: 0 to 10 percent
Elevation: 900 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Upper part of surface layer:
0 to 9 inches—grayish brown loamy coarse sand

Lower part of surface layer:
9 to 15 inches—brown sand

Upper part of substratum:
15 to 48 inches—yellowish brown and pale brown sand

Lower part of substratum:
48 to 60 inches—multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow
Hazard of water erosion: Cropland—slight; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha and Strat soils
- Cashmere and Farrell soils
- Aeneas soils that have a fine sandy loam surface layer and subsoil

Major Uses

Livestock grazing, irrigated hay and pasture, building site development, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, droughtiness, and fast infiltration.

522—Winchester loamy coarse sand, 10 to 25 percent slopes

Composition

Winchester soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces, terrace escarpments, and dunes
Parent material: Glacial outwash sand reworked by wind in some areas
Slope range: 10 to 25 percent
Elevation: 900 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Upper part of surface layer:
0 to 9 inches—grayish brown loamy coarse sand

Lower part of surface layer:
9 to 15 inches—brown sand

Upper part of substratum:
15 to 48 inches—yellowish brown and pale brown sand

Lower part of substratum:
48 to 60 inches—multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)

Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha and Strat soils
- Cashmere and Farrell soils
- Aeneas soils

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

Irrigated cropland

- If this soil is used for irrigated crops, it is limited by steepness of slope, water erosion, droughtiness, and fast infiltration.

523—Winchester loamy coarse sand, 25 to 60 percent slopes

Composition

Winchester soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash sand reworked by wind in some areas
Slope range: 25 to 60 percent
Elevation: 900 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Typical Profile

Upper part of surface layer:
0 to 9 inches—grayish brown loamy coarse sand

Lower part of surface layer:
9 to 15 inches—brown sand

Upper part of substratum:
15 to 48 inches—yellowish brown and pale brown sand

Lower part of substratum:
48 to 60 inches—multicolored sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium
Hazard of water erosion: Rangeland—moderate
Hazard of wind erosion (bare surface): Severe

Contrasting Inclusions

- Skaha soils
- Rock outcrop

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- This soil is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.
- This soil is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

524—Winchester-Rock outcrop complex, 0 to 25 percent slopes

Composition

Winchester soil and similar soils: 70 percent
Rock outcrop: 20 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces, terrace escarpments, and dunes
Parent material: Glacial outwash sand reworked by wind in some areas
Slope range: 0 to 25 percent
Elevation: 900 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Winchester Soil

Typical profile

Upper part of surface layer:
0 to 9 inches—grayish brown loamy coarse sand

Lower part of surface layer:
9 to 15 inches—brown sand

Upper part of substratum:
15 to 48 inches—yellowish brown and pale brown sand

Lower part of substratum:
48 to 60 inches—multicolored sand

Soil properties and qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Excessively drained
Permeability: Rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Rangeland—slight or moderate
Hazard of wind erosion (bare surface): Severe

Rock Outcrop

Kind of rock: Granitic rock and gneiss

Contrasting Inclusions

- Skaha and Strat soils
- Roosevelt soils
- Couleedam and Soaplake soils
- Cashmere soils

Major Uses

Livestock grazing, wildlife habitat, watershed, and recreation

Use and Management

Livestock grazing

- The soil in this unit is too sandy to support the sidewalls of trenches for conventional pipeline installation.
- The soil in this unit is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

525—Winthrop stony sandy loam, 0 to 20 percent slopes

Composition

Winthrop soil and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Alluvial fans and terraces
Parent material: Mixed alluvium and glacial outwash
Slope range: 0 to 20 percent
Elevation: 1,300 to 2,700 feet
Average annual precipitation: 14 to 16 inches
Average annual air temperature: 45 to 47 degrees F
Frost-free period: 100 to 130 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Surface layer:
0 to 10 inches—very dark grayish brown stony sandy loam

Upper part of substratum:
10 to 21 inches—light brownish gray extremely gravelly sand

Lower part of substratum:
21 to 60 inches—light brownish gray extremely gravelly coarse sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid over very rapid
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Snowpack: More than 1 foot—January and February; more than 3 feet—none
Hazard of water erosion: Cropland—slight or moderate; forestland—slight
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Bisbee and Dart soils

- Hudnut soils
- Donavan soils
- Soils that have a very stony surface

Major Uses

Livestock grazing, marginal timber production, watershed, and wildlife habitat

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—suitable; cable yarding—suitable

Silviculture

Potential for natural regeneration: Ponderosa pine—periodically
Limitation for planting: Rock fragments in the soil

Irrigated Cropland

- If this soil is used for irrigated crops, it is limited by large stones, steepness of slope, and droughtiness.

526—Wynhoff stony loam, 8 to 30 percent slopes

Composition

Wynhoff soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Footslopes, backslopes, and shoulders of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock, rhyodacite porphyry, and some metasedimentary rock with an admixture of loess
Slope range: 8 to 30 percent
Elevation: 1,400 to 3,400 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 7 inches—brown stony loam

Lower part of surface layer:
7 to 12 inches—yellowish brown gravelly loam

Subsoil:
12 to 28 inches—light yellowish brown very gravelly loam

Substratum:
28 to 34 inches—light yellowish brown extremely gravelly coarse sandy loam

Bedrock:
34 to 38 inches—rhyodacite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Slow or medium
Hazard of water erosion: Cropland—slight or moderate; rangeland—slight
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Johntom and Swakane soils
- Tyee soils
- Ginnis soils
- Conconully soils
- Soils that have a very stony surface

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction.
- This soil is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

527—Wynhoff stony loam, 30 to 65 percent slopes

Composition

Wynhoff soil and similar soils: 80 percent
Contrasting inclusions: 20 percent

Setting

Position on landscape: Backslopes of hills and mountains
Parent material: Colluvium and residuum derived from granitic rock, rhyodacite porphyry, and some metasedimentary rock with an admixture of loess

Slope range: 30 to 65 percent
Elevation: 1,400 to 3,400 feet
Average annual precipitation: 12 to 15 inches
Average annual air temperature: 47 to 49 degrees F
Frost-free period: 110 to 150 days
Rock fragments on surface: Stones cover 0.1 to 3.0 percent

Typical Profile

Upper part of surface layer:
0 to 7 inches—brown stony loam

Lower part of surface layer:
7 to 12 inches—yellowish brown gravelly loam

Subsoil:
12 to 28 inches—light yellowish brown very gravelly loam

Substratum:
28 to 34 inches—light yellowish brown extremely gravelly coarse sandy loam

Bedrock:
34 to 38 inches—rhyodacite

Soil Properties and Qualities

Depth class: Moderately deep (20 to 40 inches to bedrock)
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: 20 to 40 inches
Runoff: Medium
Hazard of water erosion: Rangeland—moderate
Hazard of wind erosion (bare surface): Slight

Contrasting Inclusions

- Johntom and Swakane soils
- Tyee soils
- Ginnis soils
- Conconully soils

Major Uses

Livestock grazing, recreation, watershed, and wildlife habitat

Use and Management

Livestock grazing

- This soil is too steep for pond construction.
- This soil is too shallow for pond construction. Water tanks, springs, wells, or pipeline systems are more effective than ponds for providing water for livestock.
- This soil is too permeable for successful pond installation unless special liners or sealants are used to reduce seepage.

528—Xeric Torriorthents, fill, 0 to 15 percent slopes

Composition

Xeric Torriorthents and similar soils: 90 percent
Contrasting inclusions: 10 percent

Setting

Position on landscape: Terraces
Parent material: Fill material derived mainly from glacial outwash and glaciofluvial material
Slope range: 0 to 15 percent
Elevation: 800 to 1,600 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days

Reference Profile

Surface layer:
0 to 19 inches—light brownish gray gravelly fine sandy loam

Substratum:
19 to 60 inches—light gray very cobbly coarse sand to silty clay loam

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained to excessively drained
Permeability: Moderately slow to rapid
Available water capacity: Moderate to moderately high
Potential rooting depth: More than 60 inches
Runoff: Slow or medium
Hazard of water erosion: Slight or moderate
Hazard of wind erosion (bare surface): Moderate

Contrasting Inclusions

- Soils that have an extremely stony surface
- Soils that have slopes of more than 15 percent and are in the Coulee Dam area

Major Uses

Building site development and recreation

Use and Management

Building site development

- Some areas have moderately slow permeability, which restricts the movement of effluent from septic tank absorption fields. This limitation can be minimized by installing a larger than normal absorption field or a mound system.
- Frost action can affect local roads and streets. Damage to roads and streets can be reduced by using coarse material that has low frost action potential for

the subbase and base and by installing impermeable cutoff blankets between the subgrade and the subbase.
• Some areas have a sandy substratum, which can hamper excavation. Cutbanks are subject to caving unless they are sloped or shored.
• Excavations and other disturbances can expose soil material that has moderate hazards of water and wind erosion. These hazards can be minimized by preserving as much of the existing plant cover as possible and by revegetating disturbed areas.

529—Xeric Torriorthents, escarpments, 30 to 65 percent slopes

Composition

Xeric Torriorthents and similar soils: 85 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Terrace escarpments
Parent material: Glacial outwash, glaciofluvial material, and glacial lake sediment
Slope range: 30 to 65 percent
Elevation: 800 to 1,800 feet
Average annual precipitation: 9 to 12 inches
Average annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 180 days
Rock fragments on surface: Cobbles and stones cover 0.01 to 15 percent

Reference Profile

Surface layer:
0 to 8 inches—brown extremely cobbly loamy sand

Upper part of substratum:
8 to 33 inches—pale brown cobbly loamy sand

Middle part of substratum:
33 to 45 inches—very pale brown silty clay loam

Lower part of substratum:
45 to 60 inches—light gray sand

Soil Properties and Qualities

Depth class: Very deep (more than 60 inches)
Drainage class: Well drained to excessively drained
Permeability: Moderately slow to rapid
Available water capacity: Low to moderately high
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Hazard of water erosion: Rangeland—moderate or severe
Hazard of wind erosion (bare surface): Slight or moderate

Contrasting Inclusions

• Soils that have an extremely stony surface
• Rock outcrop
• Rubble land

Major Uses

Livestock grazing, watershed, and wildlife habitat

Use and Management

Livestock grazing

• This unit is too steep for pond construction, range seeding, brush management using ground equipment, or normal fencing practices. Livestock tend to concentrate in the less steep areas of the unit.

530—Xerochrepts-Rubble land-Rock outcrop complex, 40 to 90 percent slopes

Composition

Xerochrepts and similar soils: 45 percent
Rubble land: 25 percent
Rock outcrop: 15 percent
Contrasting inclusions: 15 percent

Setting

Position on landscape: Backslopes of mountains
Parent material: Colluvium derived from rhyodacite, metasedimentary rock, and granitic rock with an admixture of volcanic ash in some areas
Slope range: 40 to 90 percent
Elevation: 1,800 to 4,000 feet
Average annual precipitation: 17 to 25 inches
Average annual air temperature: 42 to 44 degrees F
Frost-free period: 90 to 120 days

Xerochrepts

Reference profile

Organic mat on surface: 1.5 inches thick

Surface layer:
0 to 3 inches—brown very cobbly loam

Subsoil:
3 to 24 inches—pale brown and very pale brown extremely cobbly loam

Substratum:
24 to 60 inches—very pale brown extremely cobbly sandy loam

Soil properties and qualities

Depth class: Very deep (more than 60 inches)

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low
Potential rooting depth: More than 60 inches
Runoff: Medium or rapid
Snowpack: More than 1 foot—December through March; more than 3 feet—January and February
Hazard of water erosion: Forestland—moderate or severe

Rubble land

Rubble land consists of areas of unconsolidated rock debris, commonly known as talus, on backslopes of mountains. Rock fragments are angular, and they range in size from gravel to boulders. Rubble land commonly is barren, but small areas where soil material has accumulated between rock fragments support a very sparse cover of shrubs, grasses, and forbs.

Rock Outcrop

Kind of rock: Granitic rock, rhyodacite, phyllite, schist, graywacke, and quartzite

Contrasting Inclusions

- Mineral, Oxerine, and Thout soils
- Baldknob, Pole, and Rufus soils

Major Uses

Wildlife habitat, marginal timber production, limited livestock grazing, and watershed

Use and Management

Timber Production

Harvesting

Suitability of logging systems: Wheeled and tracked equipment—unsafe because of steepness of slope and results in excessive soil damage and erosion

Silviculture

Potential for natural regeneration: Douglas-fir and ponderosa pine—periodically
Limitations for planting: Rock outcrop, Rubble land (talus), rock fragments in the soil, and steepness of slope

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; and as sites for buildings, sanitary facilities, and highways and other transportation systems. 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, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

By Karl A. Kler, agronomist, Natural Resources Conservation Service.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

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

Each area of cropland is a unique combination of soils, slopes, elevation, climate, and other

characteristics. Management should consist of a system that takes into consideration all of these characteristics. The objectives of a cropland management system are to maintain or improve crop production while conserving energy resources and to protect the soil from erosion.

Management practices that enhance the environment may include developing watering facilities, planting hedgerows, leaving some standing grain, and establishing permanent cover for wildlife in odd areas. Other environmental concerns such as properly using pesticides, properly disposing of empty containers, trapping sediment in debris basins, and properly disposing of animal waste should also be considered.

Management practices that protect the soil from erosion can also provide additional environmental, production, and energy benefits. Erosion control practices include using an adapted crop rotation that includes cover crops, green manure crops, or grasses and legumes; using conservation tillage systems; seeding early in fall; divided-slope farming; fall chiseling; and using terraces, field windbreaks, and grassed waterways.

Approximately 5,540 acres of this survey area are used as irrigated cropland. A wide variety of crops are grown under irrigation, including apples, cherries, peaches, pears, apricots, plums, nectarines, sweet corn, corn for silage, grapes, hay and pasture, wheat, and oats. About 15,775 acres of the survey area are used as nonirrigated cropland. The main nonirrigated crop is wheat, which is grown in a wheat-summer fallow cropping system. Some barley, oats, and alfalfa are also grown.

Most of the well drained soils in the irrigated areas along the Columbia and Okanogan Rivers are suited to orchard and vegetable crops. Frost control is needed in areas of these soils where frosts occur late in spring as a result of poor air drainage. Suitable practices for frost control include use of orchard heaters, wind machines, and over-tree or under-tree sprinklers. Fruit trees that develop later in spring are less subject to frost damage. If possible, trees should be planted up and down the slope to allow air to drain freely.

Most of the crops grown in the survey area respond well to nitrogen, phosphorus, and potassium. Ammonium nitrate, ammonium sulfate, and urea fertilizers commonly are used. Periodic applications of lime are needed because of the acidifying effect of ammonium fertilizer. In areas where leaching has occurred, applications of boron may be needed. Some areas are low in content of sulfur. Some foliar applications of micronutrients are used in orchards.

The soils in the survey area range from moderately acid to very strongly alkaline. The soils that have an inherent high content of free lime should be leached with elemental sulfur or sulfuric acid. Gypsum is needed if the content of free lime is not adequate. For soils that have a water table at a relatively shallow depth, drainage should be improved before the soils are leached.

The amount of lime, gypsum, fertilizer, and other amendments applied should be based on soil tests, on the needs of the crop grown, and on the expected yields. Help in determining the kind and amount of amendments to apply can be obtained from the local office of the Cooperative Extension Service.

For the soils in the survey area that are poorly drained or somewhat poorly drained and have a high water table, drainage is needed for maximum crop production. Many of these wet soils provide critical habitat for wildlife.

Generally, soils relatively high in organic matter content have good tilth. As tilth increases, soil erosion and surface crusting decrease and the water intake rate increases. The organic matter content can be maintained by incorporating as much residue as possible into the soil and by rotating high-residue crops, such as grain, grasses, legumes, and corn, with low-residue row crops. Adequate nitrogen fertilizer is needed to facilitate the decomposition of residue to organic matter.

Proper irrigation water management and proper use of agronomic practices, such as seeding early in fall, using cover crops, and applying conservation tillage, minimize the risk of erosion. Applications of irrigation water should be adjusted to the available water capacity, the water intake rate, and the needs of the crop grown to conserve water, minimize leaching of plant nutrients, and minimize erosion.

In nonirrigated areas, using practices such as seeding fall grain early, conservation tillage, divided-slope farming, and tilling on the contour or across the slope can minimize wind and water erosion. Terraces and diversions, which are best suited to deep and moderately deep soils, reduce the length of the slopes and thus minimize runoff and erosion.

Wind erosion is a hazard on many soils in the survey area. Use of winter cover crops, strip tillage, and windbreaks help to minimize wind erosion. Maintaining crop residue on the surface or using straw, manure, and other material as a mulch minimize wind erosion, help to maintain or improve organic matter content, and conserve moisture.

Compaction and the resulting destruction of soil structure caused by excessive tillage and continuous use of heavy equipment are most severe on soils that

have a silt loam or loam surface layer. Soil compaction reduces the water intake rate and increases the risk of erosion. Compaction can be minimized through the use of minimum tillage, proper timing of tillage in relation to moisture content, close-growing crops, and crop residue. Subsoiling or chiseling when the soil is dry in fall can be used to break up a tillage pan. Use of minimum tillage and crop residue also helps to maintain soil structure.

Sprinkler and drip irrigation systems are used in the survey area. These systems permit an even, controlled application of irrigation water and, if managed properly, reduce the risk of erosion and minimize leaching of plant nutrients. Using a cropping system that provides continuous plant cover, such as hay and pasture, and growing perennial cover crops in orchards help to minimize erosion. When rejuvenating old stands of hay with a 1- to 2-year rotation of grain, conservation tillage methods should be used to reduce the risk of erosion.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table (USDA, 1961).

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

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

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

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

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

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit.

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

Class 1 soils have slight limitations that restrict their use.

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

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

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

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

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

Class 7 soils have very severe limitations that make

them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

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

Prime Farmland

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

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 8 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

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

About 43,000 acres, or 3 percent of the survey area, meet the requirements for prime farmland. The map units in the survey area that are considered prime farmland are listed at the end of this section. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as wetness and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

The map units that meet the requirements for prime farmland are:

1 Achimin silt loam, 0 to 8 percent slopes
3 Aeneas fine sandy loam, 0 to 5 percent slopes (if irrigated)
8 Aits silt loam, sandy substratum, 0 to 8 percent slopes
34 Bernhill loam, dry, 0 to 5 percent slopes
39 Boesel fine sandy loam, 0 to 3 percent slopes
42 Bong sandy loam, cool, 0 to 8 percent slopes (if irrigated)
48 Broadax silt loam, dry, 0 to 8 percent slopes
67 Cashmere fine sandy loam, 0 to 5 percent slopes (if irrigated)
73 Cedonia silt loam, 0 to 5 percent slopes
104 Coxlake silt loam, 0 to 3 percent slopes (if drained)
106 Cubcreek fine sandy loam, 0 to 3 percent slopes
120 Disautel very fine sandy loam, 0 to 8 percent slopes
139 Duleylake loam, 0 to 8 percent slopes
146 Ellisforde silt loam, 0 to 5 percent slopes (if irrigated)

160 Farrell fine sandy loam, 0 to 5 percent slopes (if irrigated)
172 Garrison loam, 0 to 5 percent slopes (if irrigated)
192 Goldlake silt loam, 0 to 8 percent slopes
195 Hadencreek silt loam, 0 to 8 percent slopes
196 Haley fine sandy loam, 0 to 5 percent slopes (if irrigated)
199 Hallcreek loam, 0 to 10 percent slopes (if irrigated)
212 Hodgson silt loam, 0 to 5 percent slopes
218 Hunters silt loam, 0 to 5 percent slopes
220 Inchelium silt loam, 0 to 5 percent slopes
234 Kartar sandy loam, warm, 0 to 10 percent slopes (if irrigated)
238 Kewach silt loam, 0 to 5 percent slopes
242 Kiehl silt loam, 0 to 8 percent slopes (if irrigated)
245 Kiehl silt loam, cool, 0 to 8 percent slopes (if irrigated)
259 Malott very fine sandy loam, 0 to 5 percent slopes (if irrigated)
273 Martella silt loam, 0 to 8 percent slopes
274 Martella silt loam, dry, 0 to 8 percent slopes
288 Mitchellpoint silt loam, 0 to 5 percent slopes
289 Monse silt loam, 0 to 8 percent slopes (if irrigated)
299 Narcisse silt loam, 0 to 3 percent slopes
300 Narcisse silt loam, dry, 0 to 3 percent slopes
301 Nespelem silt loam, 0 to 5 percent slopes
326 Okanogan loam, 0 to 5 percent slopes (if irrigated)
327 Omak silt loam, 0 to 8 percent slopes
328 Owhi loam, 0 to 8 percent slopes (if irrigated)
336 Parmenter silt loam, 0 to 8 percent slopes (if irrigated)
343 Phoebe fine sandy loam, 0 to 5 percent slopes
347 Phoebe fine sandy loam, dry, 0 to 5 percent slopes
351 Picard very fine sandy loam, 0 to 8 percent slopes
354 Pogue fine sandy loam, 0 to 5 percent slopes (if irrigated)
357 Pogue gravelly fine sandy loam, 0 to 10 percent slopes (if irrigated)
376 Ralsen silt loam, 0 to 3 percent slopes (if drained)
378 Reardan silt loam, 0 to 8 percent slopes
380 Rebecca fine sandy loam, 0 to 5 percent slopes
390 Ret silt loam, 0 to 3 percent slopes (if drained)
408 Sanpoil silt loam, 0 to 2 percent slopes (if drained)
409 Sanpoil silt loam, ponded, 0 to 2 percent slopes (if drained)
410 Scala very fine sandy loam, 0 to 5 percent slopes
459 Stevens silt loam, 0 to 8 percent slopes
468 Swipkin silt loam, 0 to 5 percent slopes
474 Timentwa loam, 0 to 8 percent slopes
503 Wannacott silt loam, 0 to 8 percent slopes

Rangeland

By Marc A. Pointel, Kevin L. Guinn, and Gerald Rouse, range conservationists, Natural Resources Conservation Service.

Rangeland makes up about 436,000 acres, or 32 percent of the survey area. Livestock operations include both Indian and non-Indian owners and operators. Herds are mainly cow-calf or cow-calf-yearling operations. Several Indian ranchers also raise a substantial number of horses.

The grazing season begins in April on the low-elevation bunchgrass-shrub range along the Columbia and Okanogan Rivers. In June and July, the livestock are moved to mixed conifer forest range in the mountains. By November the livestock have been moved to winter feeding areas near the home ranch or along the Columbia and Okanogan Rivers. Most operators produce meadow grass and/or alfalfa hay for the feeding season. During long winters or after poor hay-producing summers, additional hay is purchased from producers in the Columbia Basin.

Two major native rangeland vegetation zones are in survey area—shrub-steppe and steppe. The average annual precipitation in the shrub-steppe zone is 9 to 12 inches. The major plant community on the sandy soils in this zone and the soils in this zone that have sandy loam surface texture is antelope bitterbrush/bluebunch wheatgrass-needleandthread. The major plant community on the soils that have silt loam, loam, very fine sandy loam, or fine sandy loam surface texture is bluebunch wheatgrass/Sandberg bluegrass.

The average annual precipitation in the steppe zone is 12 to 15 inches. The major plant communities on the soils in this zone that have silt loam, loam, very fine sandy loam, or fine sandy loam surface texture are bluebunch wheatgrass/Sandberg bluegrass and Idaho fescue/bluebunch wheatgrass. The major plant community on the sandy soils and the soils that have sandy loam surface texture is antelope bitterbrush/bluebunch wheatgrass. Idaho fescue is restricted mainly to the north-facing slopes, and it rarely occurs in areas that receive less than 12 inches of precipitation annually.

The very shallow Bakeoven soils in both the shrub-steppe and steppe zones support a stiff sagebrush/

Sandberg bluegrass plant community. The shallow, granitic, moderately coarse textured Couleedam soils in the shrub-steppe zone support an antelope bitterbrush/bluebunch wheatgrass-needleandthread plant community. The shallow, granitic, moderately coarse textured Swakane soils in the steppe zone support an antelope bitterbrush/bluebunch wheatgrass plant community. The shallow Baldknob and Rufus soils that receive more than 15 inches of precipitation and are associated with forested plant communities support an Idaho fescue/bluebunch wheatgrass plant community.

The wet bottomland areas dominantly support basin wildrye. The presence of inland saltgrass generally indicates a moist, saline soil condition. In the basin wildrye/black greasewood plant community, inland saltgrass generally is absent, possibly because of the dry soil conditions in midsummer to fall. The black greasewood/inland saltgrass plant community occurs on soils that are strongly saline and sodic.

The focal point in range management is a planned grazing system. A properly designed grazing system incorporates proper timing and use of forage plants with proper stocking rates and distribution of livestock. Also, cross-fencing and water developments commonly are needed. Brush management, range seeding, and weed control can accelerate range improvement if combined with periods of rest and a planned grazing system.

Table 6 contains useful information for range development. The soils of the survey area are rated according to limitations that affect pipelines, ponds, seeding, brush management, and fences. The degree of limitation is expressed as slight, moderate, or severe. *Slight* means that the soil properties and site features are generally favorable for the indicated development. *Moderate* means that the soil properties and site features are not favorable for the indicated development and special planning, design, equipment, or maintenance is needed. *Severe* means that the soil properties or site features are so unfavorable or difficult to overcome that special planning and design, significant increases in cost, and possibly much increased maintenance are required. More information on these important range developments is given under the heading “Detailed Soil Map Units.”

The rating for *pipelines* refers to the degree of difficulty in installing and maintaining pipelines for livestock water developments. The limitations are based on soil properties, site features, and observed performance of the soils. The ease of excavating, filling, and compacting a pipeline trench is affected by depth to bedrock, dense material, or a hardpan; rock fragments; soil texture; and steepness of slope. The depth to a seasonal high water table and the hazard of flooding affect the time of year that excavations can be made. Soil texture and depth to the water table affect the resistance of the excavation walls to sloughing or caving. Corrosivity to uncoated steel and concrete can affect the selection of pipeline material.

The rating for *ponds* refers to the degree of difficulty that can be expected in constructing and maintaining small ponds for watering livestock. The limitations are based on soil properties, site features, and observed performance of the soils. The ease of excavating is affected by depth to bedrock, dense material, or a thick hardpan and by steepness of slope. Soil permeability affects the seepage potential; ponds constructed in soils that have moderate permeability or higher may need linings or clay blankets to reduce the risk of seepage. Excessive slope can affect the storage capacity of ponds. Corrosivity to uncoated steel and concrete can affect the types of material that can be used to construct ponds.

The rating for *seeding* refers to the degree of difficulty that can be expected in seeding an area of rangeland with mechanical ground equipment such as a rangeland drill, disc drill, or deep furrow drill. Soil properties that restrict the types of adapted plant species are also considered. The suitability of a soil for broadcast seeding is not considered. The limitations are based on soil properties, site features, and observed performance of the soils. Mechanical seedbed preparation and planting operations are affected by steepness of slope, soil texture, stones and boulders on or near the soil surface, rock fragments in the surface layer, and depth to bedrock. The time of year when seeding can be done is affected by a seasonal high water table and the hazard of flooding.

The selection of adapted plant species is an important consideration for successful seeding. Soil properties that affect species selection are depth to bedrock, dense material, or a hardpan; available water capacity; excessive salinity and sodicity; a seasonal high water table; and hazard of flooding.

The rating for *brush management* refers to the degree of difficulty that can be expected in using mechanical methods to control brush. Mechanical brush management methods include chaining, railing, disking, and using rollers or brush beaters. The ratings are based on soil properties and site features. Steepness of slope and the presence of surface stones and boulders are the main soil properties that limit the operation of brush management equipment. The presence of a seasonal high water table and the hazard of flooding affect the time of year when brush management operations are suitable.

The rating for *fences* refers to the degree of difficulty that can be expected in installing and maintaining fencelines for livestock control. The limitations are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting fencepost holes is affected by depth to bedrock, dense material, or a hardpan; rock fragments; soil texture; and steepness of slope. The depth to a seasonal high water table and the hazard of flooding affect the time of year when fences can be installed. Maintenance costs and fence design are affected by the amount of snow damage expected. Corrosivity to uncoated steel can affect the selection of fencepost material.

Ecological Site

In areas that have similar climate and topography, differences in the kind and amount of rangeland or forest understory vegetation are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Table 7 shows, for each soil that supports vegetation, the ecological site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of rangeland ecological sites, commonly referred to as range sites, are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service. Descriptions of forest ecological sites, commonly referred to as habitat types, are given in "Forest Habitat Types of the Colville Indian Reservation" (Clausnitzer and Zamora, 1987).

Total dry-weight production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content. Total dry-weight production has not been estimated for forest ecological sites. Production values for these sites are based on a climax plant community condition, which is rare in the survey area. Production values for forestland sites under four successional stages of development are given in table 11.

Characteristic vegetation—the grasses, forbs, and shrubs that make up most of the plant community on each soil—is listed by common name. Under *composition*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Ecological site management requires a knowledge of the kinds of soil and of the plant community. It also requires an evaluation of the present vegetative condition and trend. Vegetative condition is determined by comparing the present plant community with the climax plant community on a particular ecological site. The more closely the existing community resembles the climax community, the higher the vegetation condition rating. Trend is defined as the direction of change in an existing plant community relative to the climax plant community. Further information about the vegetative condition and trend is available in the "National Range and Pasture Handbook" (http://www.ftw.nrcs.usda.gov/glti/NRPH.html).

The objective in ecological site management is to control grazing so that the plants growing on a site are about the same in kind and amount as the climax plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a vegetative condition somewhat below the

climax meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Forest Overstory Vegetation, Management, and Productivity

By Timothy Leadingham, forester, Bureau of Indian Affairs.

Approximately 66 percent of the survey area is forested. Of this total, about 73 percent is classified as commercial forestland. The remaining 27 percent is classified as either biologically or economically marginal or is inoperable under current or contemplated harvest methods. Of the total commercial forestland, about 84 percent is owned by the Colville Confederated Tribes and the remainder is owned by private industry, private nontribal individuals, or individual tribal members. Two wood products manufacturing facilities are in the survey area at Omak, Washington. Three facilities that are outside the survey area but use material from the area are at Republic, Kettle Falls, and Arden, Washington. The Colville Tribe also operates a treated post and pole plant at Inchelium, Washington, that processes mostly lodgepole pine.

The average annual precipitation on the forestland varies from 15 inches to more than 30 inches. Most of the precipitation is received in the form of snow. Very little rain falls during June through September. The high temperature in summer often exceeds 100 degrees F, and the low temperature in winter often is below zero.

Fires caused by lightning and man are common in summer.

Forest Overstory Vegetation

The survey area can be divided into four broad vegetative zones based on a combination of the potential climax overstory tree species and the associated understory vegetation. This combination is called a forest ecological site. Several related ecological sites, all of which have the same climax overstory tree species, are within each of the four zones. Although the tree species in the zone name may be dominant in many areas, other species occur in nearly pure stands or mixed stands. Boundary lines between zones are gradual transitions rather than sharp divisions.

Several forest management practices and associated concerns generally apply to all of the zones. These include use of cable logging systems in areas that have slopes of more than 30 to 40 percent to prevent excessive soil erosion; restriction of harvesting operations in spring and use of designated skid trails to reduce soil compaction; thinning to control stocking; use of adapted species; sanitation for control of dwarf mistletoe; and salvage of dead trees. Broadcast burning or machine piling and burning commonly are used to treat slash and prepare a site for regeneration harvests.

Ponderosa pine zone.—Elevation of this zone is 1,400 to 3,000 feet. The average annual precipitation is 15 to 18 inches, the frost-free period is 100 to 130 days, and the average annual air temperature is 45 to 48 degrees F. Typical soils include those of the Donavan (warm phase), Northstar, Raisio (dry phase), Spokane (warm phase), and Vanbrunt series.

This zone dominantly supports ponderosa pine with only minor amounts of Douglas-fir. Quaking aspen is on the wetter soils. Forest ecological sites include ponderosa pine/common snowberry, ponderosa pine/Idaho fescue, ponderosa pine/antelope bitterbrush, and ponderosa pine/bluebunch wheatgrass. Common understory plants include common snowberry, bluebunch wheatgrass, Idaho fescue, antelope bitterbrush, saskatoon serviceberry, arrowleaf balsamroot, white spirea, snowbrush ceanothus, rose, creeping Oregongrape, and common yarrow.

This zone commonly is affected by dwarf mistletoe and by mountain pine beetle and other bark beetle species. High seedling mortality as a result of competition from brush and grass, low available water capacity, and high temperatures in summer also are concerns.

The soils in this zone have the lowest forest productivity. The planned rotation age for harvesting usually is 100 to 140 years. The most desirable management techniques include seed-tree and shelterwood regeneration harvests. A group selection technique may be needed to produce natural regeneration in the drier areas. Ponderosa pine regenerates well naturally, and small site-specific areas are suited to Douglas-fir regeneration. Artificial regeneration may be needed in small clearcuts in areas infested with disease and insects.

Douglas-fir zone.—Elevation of this zone is 2,000 to 4,000 feet. The average annual precipitation is 16 to 25 inches, the frost-free period is 90 to 120 days, and the average annual air temperature is 42 to 46 degrees F. Typical soils include those of the Nevine, Republic, Parmenter, Mineral, Inkler, and Centralpeak series.

Tree species in this zone include Douglas-fir, ponderosa pine, western larch, lodgepole pine, and quaking aspen. Forest ecological sites include Douglas-fir/mallow ninebark, Douglas-fir/common snowberry, and Douglas-fir/pinegrass. Common understory plants include common snowberry, mallow

ninebark, creambush oceanspray, pinegrass, white spirea, kinnikinnick, common chokecherry, rose, longtube twinflower, saskatoon serviceberry, and myrtle pachystima.

The Douglas-fir, ponderosa pine, and western larch in this zone are affected by dwarf mistletoe. Root rot is also a concern in Douglas-fir. Insects that are a concern include mountain pine beetle in ponderosa pine and lodgepole pine and periodic outbreaks of tussock moth and spruce budworm in Douglas-fir.

The rotation age for harvesting in this zone ranges from 80 years for lodgepole pine to 120 years for ponderosa pine, western larch, and Douglas-fir. Seed-tree, shelterwood, or clearcut harvesting methods are most commonly used to promote regeneration of desired species. Group selection harvesting may be used in warmer, drier areas to promote natural regeneration. Ponderosa pine is most favorable for natural or artificial regeneration followed by western larch on cooler, moister sites and then Douglas-fir and lodgepole pine. Competition from brush and grass is a concern for regeneration, and control of competing vegetation may be necessary.

Grand fir zone.—Elevation in this zone is 2,000 to 4,000 feet. The average annual precipitation is 18 to 25 inches. The frost-free period is 90 to 120 days. The average annual air temperature is 42 to 44 degrees F. Typical soils include those of the Elbowlake, Aits, Kiehl (cool phase), Martella, Wilmont (cool phase), and Henneway series.

This zone has the greatest diversity of tree species and other plants. Trees include grand fir, Douglas-fir, western larch, ponderosa pine, lodgepole pine, and Englemann spruce and on more moist soils, western redcedar. Sitka alder, paper birch, and quaking aspen also are present. Forest ecological sites include grand fir/longtube twinflower and grand fir/Oregon fairybells and in more moist areas, western redcedar/longtube twinflower. Common understory plants include longtube twinflower, queencup beadlily, myrtle pachystima, pinegrass, Oregon fairybells, starry false Solomon's-seal, dwarf rose, mallow ninebark, creambush oceanspray, thimbleberry, black mountain huckleberry, prince's pine, and sidebells pyrola.

Douglas-fir and western larch in this zone are affected by dwarf mistletoe, and Douglas-fir and grand fir are affected by root rot. Insects, including mountain pine beetle, which affects ponderosa pine and lodgepole pine, and periodic outbreaks of tussock moth and spruce budworm in Douglas-fir and western larch, are a concern.

The rotation age for harvesting in this zone is 80 years for lodgepole pine and as high as 120 years for Douglas-fir, western larch, and ponderosa pine. Seed-tree, shelterwood, and clearcut harvest methods commonly are used to promote regeneration of desired species. Western larch and ponderosa pine are most favorable for natural and artificial regeneration in the warmer areas followed by Douglas-fir, lodgepole pine, and grand fir. Control of competing brush and grass species may be necessary to ensure the establishment of natural and artificial regeneration.

Subalpine fir zone.—Elevation of this zone is 3,500 to 6,700 feet. The average annual precipitation is 20 to 35 inches. The frost-free period is 70 to 100 days. The average annual air temperature is 37 to 41 degrees F. Typical soils include those of the Manley, Moses, Resner, Togo, and Buhrig series.

Tree species in this zone include subalpine fir, Douglas-fir, western larch, lodgepole pine, Engelmann spruce, quaking aspen, and paper birch. Forest ecological sites include subalpine fir/longtube twinflower, subalpine fir/black mountain huckleberry, and subalpine fir/pinegrass. Subalpine fir-whitebark pine/cascade azalea is at the highest elevations. Forest understory species include longtube twinflower, queencup beadlily, myrtle pachystima, Utah honeysuckle, pinegrass, Rocky Mountain maple, sidebells pyrola, black mountain huckleberry, princes pine, bunchberry dogwood, prickly currant, and thimbleberry.

Douglas-fir and subalpine fir in this zone are affected by root rot, and Douglas-fir and western larch are affected by dwarf mistletoe. Mountain pine beetle in lodgepole pine and periodic outbreaks of spruce budworm are concerns.

Seed-tree, shelterwood, and clearcut harvest methods can be used to promote natural regeneration. Western larch is the most favorable species for both natural and artificial regeneration followed by Douglas-fir, Engelmann spruce in the moister areas, and lodgepole pine. Competition from brush and pinegrass can delay or prevent natural and artificial regeneration.

Forest Overstory Management

Tables 8 and 9 show, for each soil that supports forestland, the interpretive ratings for various aspects of forest management (USDA, 1985). Table 8 gives interpretive ratings for onsite use, trafficability, mass movement, and damage by fire.

Physical limitations refer to the most limiting soil and site characteristics or properties that impact onsite use.

Compaction hazard (moist) is the susceptibility of the soil, under moist conditions, to compaction as a result of equipment use. Soil compaction can have a

long-term detrimental effect on site quality. The ratings of *slight, moderate,* and *severe* are based on observations, characteristics of the organic surface material, and properties of the upper 12 inches of the mineral soil. The soil properties considered in the ratings include soil texture; thickness of the O horizon; rock fragment content, size, and shape; and soil structure. In areas that have slopes of more than 35 percent, equipment use is limited and thus the compaction hazard rating is based on the effect, at impact point, of falling trees.

Puddling hazard (wet) is the susceptibility of the soil, under wet conditions, to puddling as a result of equipment use. The ratings of *slight, moderate,* and *severe* are based on characteristics of the organic surface material and properties of the upper 12 inches of the mineral soil. The soil properties considered in the ratings include soil texture; thickness of the O horizon; rock fragment content, size, and shape; and soil structure. A *moderate* rating may indicate a need to restrict equipment use to designated skid trails. A *severe* rating may indicate a need to limit equipment use to drier periods or to areas that are covered with snow or are frozen.

Displacement hazard (dry) is the susceptibility of the soil surface, under dry conditions, to displacement as a result of equipment use. The soil properties considered in the ratings include soil texture, thickness of the O horizon, and rock fragment content. A *slight* rating indicates that equipment use would displace a minimal amount of the soil surface, a *moderate* rating indicates that equipment use should be restricted to designated areas, and a *severe* rating indicates that all equipment use should be limited to specific periods, such as when the soil is covered with snow.

Mass movement potential is the susceptibility of the soil to mass movement. The ratings are based on observations only. *Stable* indicates that the soils are not subject to mass movement. Most of the soils rated as stable have slopes of less than 50 percent. *Surficial landslides* indicates fast mass movement of the upper layers only, generally those to a depth of 5 to 10 feet. *Deep-seated landslides* indicates fast mass movement of both the upper layers and the material at a depth more than 5 to 10 feet. *Soil creep* indicates very slow mass movement of surficial or deep-seated material.

Soil damage by fire is the susceptibility of the soil to damage by fire. The ratings of *slight, moderate,* and *severe* are based on observations, characteristics of the organic surface material, and properties of the upper 8 inches of the mineral soil. The soil properties considered in the ratings include soil texture, steepness and aspect of slope, and thickness of the O and A horizons. A *slight* rating indicates there is minimal concern for soil damage resulting from normal prescribed burning for slash reduction, *moderate* indicates a need for careful planning with consideration of soil protection and offsite effects of fire, and *severe* indicates a very high potential for degradation of the soil and the quality of the site. If slash is highly concentrated, burns should be initiated only when the moisture content of the fuel is high.

Table 9 gives interpretive ratings for roads and skid trails, road rock, cut and fill erosion, cut and fill slope stability, and dust hazard.

Roads and skid trails refers to use of unsurfaced roads or skid trails, under wet or nearly saturated conditions, by rubber-tired skidders, pickup trucks, and log trucks. The rating is based on the soil material only, without the addition of base rock. The ratings are *soft, slippery, sticky,* and *firm.* A rating of *firm* indicates that there is sufficient rock and soil material to provide an adequate surface for vehicles and that there is adequate soil drainage throughout the upper 12 inches of the soil.

Road rock refers to the accessibility and grade of the underlying material or bedrock for use as base rock for road construction. A rating of *readily available* indicates that the soil material above the bedrock is less than 10 feet thick and that the rock is of sufficient strength or grade to be used as base rock for roads. The kind of rock, such as granitic, volcanic, or metamorphic rock or rounded gravel and cobbles, is also given. A rating of *not readily available* indicates that the soil is not suitable as a source of base rock for road construction.

Cut and fill erosion refers to the susceptibility of the exposed soil material to erosion. The ratings of *slight, moderate,* and *severe* are based on the erodibility of all soil horizons to a depth of 60 inches (see table 18, Kw factor), percent slope, and the intensity and duration of rainfall. A rating of *slight* indicates that erosion control measures generally are not needed. A rating of *moderate* indicates a need for site assessment to determine whether erosion control measures should be implemented. A rating of *severe* indicates that erosion control measures probably are needed and should be implemented as soon as practical.

Cut and fill slope stability refers to the susceptibility of the exposed soil to raveling when dry and to slumping or sloughing when wet. The ratings are based on observation of road cut and fill slopes. A rating of *stable* indicates that raveling, slumping, and sloughing were not apparent or were observed only occasionally. Stability typically is a concern in areas that have slopes of 50 percent or more.

Dust hazard refers to the risk of particles becoming airborne during periods of disturbance when the soil is dry. The ratings are based on observation and are strictly subjective. A *slight* rating indicates that vehicular traffic would produce minimal amounts of airborne particulates. A *moderate* rating indicates that vehicular traffic should be restricted unless dust abatement measures are applied. A *severe* rating indicates that vehicular traffic should be restricted and dust abatement measures are needed.

In the section "Detailed Soil Map Units," each soil that supports forestland is rated for its potential for natural regeneration. The rating assumes that a suitable seed source is available. *Readily* indicates that the stated species can regenerate naturally within 2 to 5 years after seedbed disturbance. *Periodically* indicates that the stated species can regenerate naturally within 5 to 10 years after seedbed disturbance.

Forest Overstory Productivity

Table 10 shows, for each soil that supports forestland, the potential production for dominant and codominant tree species.

Mean site index refers to the height, in feet, that the dominant and codominant trees can be expected to reach in 50 or 100 years. It is measured at breast height, or 4.5 feet above the ground. Site index indicates site quality. The site index for Douglas-fir, grand fir, and western larch is based on a 50-year site curve (Cochran, 1979, PNW-251; Cochran, 1979, PNW-252; Schmidt, 1976). The site index for ponderosa pine, lodgepole pine, Engelmann spruce, and subalpine fir is based on a 100-year site curve (Meyer, 1961; Alexander, 1966; Alexander, 1967). The site index for quaking aspen is based on an 80-year site curve (Baker, 1925). Generally, the higher the site index, the higher the potential of the soil to produce wood fiber. A site index for a specific species on one soil should only be compared to site indexes for the same species on other soils. Site indexes for 50-year breast height age should not be compared with those for 100-year total age.

Typical basal area refers to the percentage of normal basal area present in stands of the indicated species. The normal basal area of a stand is that which can be expected under optimum growing and competition conditions.

Estimated growth at culmination, expressed in cubic feet per acre at the indicated age, refers to the growth of fully stocked, even-aged, unmanaged stands. Estimated growth at culmination is given for the most productive tree species, and it is adjusted for basal area percentage.

Estimated yield at age 100 is given for the dominant and codominant species. It is expressed in cubic feet per acre, and it is adjusted for basal area percentage.

Forest Understory Vegetation, Management, and Productivity

By Kevin J Hanley, range conservationist, Natural Resources Conservation Service.

Forest Understory Vegetation and Management

The soils, climate, geology, and topography of the survey area are diverse, and they support a wide variety of forested plant communities. These communities encompass a wide array of species composition, vegetative structure, and productivity potential for understory forage. To minimize the complexity of these plant communities and to aid in management of them, the forest vegetation in the survey area has been classified into units called habitat types. A habitat type is defined as all land capable of producing a similar climax plant association (Daubenmire, 1968). For the purposes of this survey, the habitat types are referred to as ecological sites. These sites are described in "Forest Habitat Types of the Colville Indian Reservation" (Clausnitzer and Zamora, 1987). The ecological sites that are correlated to each soil in the survey area are shown in table 7. Plant codes are used to name the ecological sites; for example, the Douglas-fir/common snowberry site is PSME/SYAL. The names are assigned according to the most competitive overstory tree species and the characteristic shrub or herb species that most typifies the undergrowth in the climax plant community (Clausnitzer and Zamora, 1987). The competitive ability of a coniferous tree species generally refers to its shade tolerance. The most competitive tree species is that which is the most tolerant of shade and thus is capable of perpetuating itself in closed stands. It is also considered to be the climax dominant species.

Plant communities are classified on the basis of climax condition. Climax conditions rarely occur in the survey area because of past disturbances such as timber harvesting and wildfire. The forested areas occur as a mosaic of successional vegetative stages. Each stage is unique as far as structure, species composition, and biomass production and the management needed.

Nearly all the forested ecological sites in the survey area are considered suitable for grazing; however, the suitability is directly related to the successional vegetative stage. Not all ecological sites are suitable for grazing during each successional stage.

Understory forage production and livestock accessibility are influenced by the density of the overstory tree canopy and the stem density. The density of the canopy determines the amount and quality of light that understory plants receive, and the stem density affects livestock movement and distribution. Because the density of the canopy and the stem density vary according to the successional stage, understory species composition and forage production also vary. It is important for managers to understand the successional stages of each ecological site in order to predict changes in the vegetation.

Forest succession is dynamic, and it can follow multiple pathways during its movement toward the climax plant community. The composition and structure of the overstory trees and the biomass production and species composition of the understory plants identify each successional stage. The forested ecological sites in the survey area typically follow the seven generalized sequential stages of forest succession of northern Rocky Mountain coniferous forests. The successional progression of the vegetative stages begins after a disturbance such as timber harvesting or fire. It begins with an initial herbaceous stage characterized by a dominance of grasses and forbs. A small number of tree seedlings and regenerating shrubs also are present during this stage. On most ecological sites, this stage is the most suitable for grazing because the production of palatable forage is high and accessibility to animals is least limited. This stage, however, is of short duration.

As the shrub component develops, the herbaceous stage gives way to the shrub stage. The tree seedlings that were present in the herbaceous stage continue to increase both in diameter and height, eventually reaching sapling size (2 to 5 inches in diameter at breast height), to form the sapling stage. The production and coverage of shrubs peak midway through the sapling stage and begin to decrease as the saplings continue to develop.

By the time the saplings have reached pole size (5 to 9 inches in diameter at breast height), the stature of the shrub component has become severely reduced as a result of the increased amount of shade from the dense overstory tree canopy. For all ecological sites, the pole stage is the least suitable for grazing because the understory vegetation commonly is very sparse to nearly nonexistent and livestock movement is severely hindered by the high stem density. As the pole stage progresses, shade-tolerant trees (usually a representation of the climax plant community) occur as seedlings scattered throughout the understory.

As the vigorous dominant pole-sized trees mature and the stand is thinned through attrition of the less vigorous trees, the pole stage eventually deteriorates and gives way to the young forest stage. At the onset of the young forest stage, the stand is characterized by an overstory of mature (10 inches in diameter or more at breast height), light-loving, shade-intolerant successional trees. The understory vegetation has stabilized, and the species composition and structure resemble those before the disturbance. The shade-tolerant trees scattered throughout the understory during the pole stage have developed into saplings and poles. As the young forest stage progresses, these trees continue to develop, reach maturity, and reproduce. The composition of the overstory includes mature representatives of the climax species as well as those of the existing successional species. Overstory shading hinders the reproduction of the shade-intolerant successional species and favors that of the shade-tolerant climax species.

The transition from the young forest stage to the mature forest stage occurs when the composition of the overstory is 50 percent or more shade-tolerant climax species. As the mature forest stage progresses, the remaining successional trees degenerate and die. The understory vegetation is stable, and the species composition and structure are similar to those before the disturbance. Eventually, the successional pathway culminates with the climax forest stage in which all age classes of the climax tree species are represented and the successional species are absent.

The suitability of the young forest, mature forest, and climax forest stages for grazing varies according to the ecological site. The ponderosa pine and Douglas-fir sites generally are suitable for grazing during all stages except the pole stage. The grand fir, western redcedar, and subalpine fir sites generally are suitable for grazing only during the shrub stage because the production of palatable forage is limited during the other stages. An exception is the subalpine fir/pinegrass site, which generally produces a relatively high amount of forage and is suitable for grazing during all stages except the pole stage.

In order to characterize the seven generalized stages, this discussion of forest succession has been greatly oversimplified. Not all forested ecological sites follow the herbaceous-shrub-sapling-pole-young forest-mature forest-climax forest successional pathway. The pathway that a particular ecological site takes after a disturbance depends on the interaction of site-specific factors such as the nature and severity of the disturbance, the species structure and composition of the stand prior to the disturbance, the environmental conditions inherent to the area, the

structure and composition of the vegetation surrounding the area, and the history of disturbances in the area (Zamora, 1982).

Not all forested ecological sites are capable of exhibiting all seven successional stages. The ponderosa pine sites in the survey area, for example, do not exhibit a young forest stage because ponderosa pine is both the climax tree species and the only native conifer on these sites.

Moisture limitations prevent the development of a truly uniform pole stage on the ponderosa pine/bluebunch wheatgrass, ponderosa pine/Idaho fescue, and ponderosa pine/antelope bitterbrush sites. Abundant ponderosa pine seedlings become established on these sites in an episodic manner, and they develop into small thickets of even-aged saplings and poles. Because of the severe competition for the available soil moisture, relatively few of these trees survive and reach maturity. Successionally, these sites proceed directly from a sapling/pole or pole stage to a mature forest stage.

Distinct sapling and pole stages rarely occur on the ponderosa pine/common snowberry and Douglas-fir/common snowberry sites. Rather, a transitional sapling/pole stage most commonly occurs and it consists of a pole-sized overstory canopy in combination with sapling-sized understory.

Similarly, a true distinct shrub stage rarely occurs on the ecological sites characterized by herbaceous understory, such as ponderosa pine/bunchgrass, Douglas-fir/pinegrass, and subalpine fir/pinegrass sites. Although snowbrush ceanothus has the potential to sprout prolifically on pinegrass sites following fire, its extent in a true uniform shrub stage is limited.

Forest Understory Productivity

Table 11 provides forage understory productivity for four successional stages. It is given in pounds of dry weight vegetation per acre. *Mature forest* refers to a forest that has reached an age class at which the growth and vigor of the trees begins to decline. Mature forests generally are a mixture of species that are intolerant of shade with understory species consisting of grasses and shade-tolerant forbs and shrubs. *Young forest* refers to a forest that supports a mixture of both shade-tolerant and shade-intolerant species of varying age classes. The forest canopy may be very dense, limiting the growth of shade-intolerant grasses, forbs, and shrubs. *Pole* refers to stands that consist of diverse species, a variety of age classes, and a variety of densities. The trees generally have stems that range from 2 to 8 inches in diameter at breast height. The rate of height growth begins to decline during this stage. Understory vegetation may consist primarily of low-growing, shade-tolerant grasses and forbs and very few shrubs. *Shrub* refers to the early secondary succession of forestland in which the productivity of grasses, forbs, and shrubs is highest.

The mean annual production of understory vegetation includes all herbaceous plants and the leaves, twigs, and fruit of woody plants to a maximum height of 4.5 feet. Production values are given only for the four successional stages that are of sufficient extent and duration that specific management is needed. Although areas of herbaceous stage and sapling stage vegetation are present, they are of such limited extent and short duration that they have not been included as important successional stages. The production values for the climax forest stage have not been provided because true climax forest conditions rarely occur in the survey area.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition. Because the soils in this survey area are droughty in summer, irrigation is needed after seedling development to ensure survival of the plantings and for optimal plant growth.

Table 12 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Recreation

The survey area offers many diverse outdoor recreational opportunities. The Coulee Dam National

Recreation Area extends along the eastern and southeastern borders of the area, along the shores of Franklin Roosevelt Lake. This recreational area is used for boating, fishing, swimming, and camping, with developed campgrounds at the Sanpoil River arm and Wilmont Creek arm.

Bridgeport State Park, near Chief Joseph Dam, on Rufus Woods Lake, has a golf course as well as camping and boating facilities. Campgrounds for tribal members are at Owhi and Gold Lakes. Two resorts that are open to the public are at North Twin and South Twin Lakes.

Hunting is a popular activity in fall. White-tailed deer and mule deer are the main big game species. A limited number of elk permits are issued each year. Upland game birds include pheasant, quail, chukar, and grouse. Waterfowl are common in the Goose Lake and Timentwa Flats areas.

The extensive network of logging roads in the survey area offers excellent opportunities for cross-country skiing and snowmobiling in winter.

Wildlife Habitat

The survey area supports a wide variety of habitats that support a wide diversity of wildlife, including big game, upland game birds, waterfowl raptors, and numerous small birds and mammals. Most of the streams and lakes support game fish. Hunting and fishing has been important in the heritage of the Colville Indians, and it is still widely practiced.

Mule deer and white-tailed deer are abundant throughout the survey area in summer. In winter they feed on bitterbrush and redstem ceanothus on south- and west-facing slopes at elevations below 3,600 feet. Their primary winter range is in general soil map units 1, 2, 3, 5, 6, 7, 8, 10, 11, 13, 15, 16, and 18. Elk recently have been reintroduced in the survey area, and their numbers are increasing. In winter the elk feed on bunchgrass-covered slopes in general soil map units 1, 6, 7, 15, and 18. Snow depths seldom limit elk movement; therefore, they winter at higher elevations than do deer. Winter range for deer and elk has been adversely affected in several areas by human activity, including home construction and replacement of native shrub plant communities with orchards. Black bear are throughout the timbered areas of the survey area, and they generally avoid the more open rangeland plant communities.

Ruffed, blue, and Franklin's grouse are in the coniferous forests and along stream bottoms that have abundant woody riparian vegetation. Remnant flocks of Columbian sharp-tailed grouse are in isolated areas of general soil map units 1, 2, 3, 5, 6, and 7 that support shrub-steppe plant communities. Game birds, including pheasant, gray partridge, chukar partridge, mourning dove, and California quail, are in areas of shrub-steppe plant communities that are interspersed with areas of cropland and riparian vegetation.

The most common fur-bearing animal in the survey area is the coyote. It is throughout the area. Although much less abundant, cougar, bobcat, and lynx also are common inhabitants of the coniferous forests, some of which are interspersed with areas of grassland. Badger are common in areas that support shrub-steppe plant communities. Wolverine and fisher marten and other marten occur rarely in densely forested areas. Muskrat, beaver, mink, and raccoon are common in or near streams, lakes, and wetlands.

Aquatic habitats in the survey area support all of the waterfowl common to the interior areas of the Pacific Flyway. Abundant breeding populations of Canada geese inhabit the Okanogan and Columbia Rivers and some of the larger lakes. Other water-dependent birds include great blue heron, belted kingfisher, snipe, osprey, and dipper. Waterfowl and water birds are in all of the lakes, rivers, and wetlands in the area, particularly the wetlands in general soil map units 3, 4, and 5.

Bald eagles winter along the Columbia, Sanpoil, and Okanogan Rivers. Peregrine falcon occasionally pass through the area during migration.

The Okanogan River supports small runs of anadromous steelhead trout and summer chinook, sockeye, and coho salmon. Resident game fish in the streams and lakes include rainbow, brook, and brown trout as well as large-mouthed and small-mouthed bass and whitefish. The introduction of walleye into the Columbia River has created an important opportunity for sport fishing. Some of the more important lake fisheries include North Twin, South Twin, Owhi, McGinnis, Buffalo, Round, and Simpson Lakes. Omak Lake supports a thriving population of Lahontan cutthroat trout, a species introduced from the alkaline waters of Nevada.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use

planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 13 shows the degree and kind of soil limitations that affect dwellings with and without basements and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the

Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Sanitary Facilities

Table 14 shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the

lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Construction Materials

Tables 15 and 16 give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 15, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of reclamation material, roadfill, and topsoil. 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 reclamation material, roadfill, or topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in table 16 do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In table 16, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

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 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 physical and chemical properties.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 17 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries,

the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 18 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 18, 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 amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (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. In table 18, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 18 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet

and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 19 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg

concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Soil Features

Table 20 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, duripans, and layers of dense material. 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 mineral 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.

Water Features

Table 21 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious

material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 21 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 21 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1975 and 1987). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 22 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten 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 Alfisol.

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 Xeralf (*Xer*, meaning dry, plus *alf*, from Alfisol).

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 Haploxeralfs (*Hapl*, meaning minimal horizonation, plus *xeralf*, the suborder of the Alfisols that has a xeric moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Haploxeralfs.

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

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

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Staff, 1951). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1975) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 1987). Unless otherwise indicated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

Achimin Series

The Achimin series consists of very deep, well drained soils on toeslopes, footslopes, and backslopes of foothills and in depressions on till plains. These soils formed in loess overlying siltstone residuum. Slopes are 0 to 30 percent. Elevation is 1,500 to 2,600 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Achimin silt loam in an area of Achimin-Calcic Pachic Haploxerolls complex, 3 to 30 percent slopes, about 18 miles west of Nespelem; 2,100 feet south and 600 feet west of the northeast corner of sec. 31, T. 31 N., R. 28 E., W.M.:

A1—0 to 7 inches; brown (10YR 4/3) silt loam, very dark brown (10YR 2/2) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine vesicular pores; 5 percent pebbles; neutral; gradual smooth boundary.

A2—7 to 18 inches; brown (10YR 4/3) silt loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many very fine and common fine roots; common fine vesicular pores; 5 percent pebbles; neutral; clear smooth boundary.

Bt1—18 to 24 inches; yellowish brown (10YR 5/4) silty clay loam, dark yellowish brown (10YR 4/3) moist; moderate fine subangular blocky structure; hard, friable, sticky and plastic; common very fine roots; common fine vesicular pores; common distinct brown (10YR 3/4) clay films on faces of peds; 5 percent pebbles; mildly alkaline; abrupt smooth boundary.

2Bt2—24 to 29 inches; dark yellowish brown (10YR 4/6) silty clay loam, dark yellowish brown (10YR 3/4) moist; moderate fine angular blocky structure; hard, firm, sticky and plastic; few very fine roots; common fine vesicular pores; many distinct brown (10YR 4/3) clay films on faces of peds; 2 percent pebbles; moderately alkaline; clear smooth boundary.

2Bt3—29 to 34 inches; yellowish brown (10YR 5/6) silty clay loam, dark yellowish brown (10YR 4/6) moist; massive; slightly hard, friable, sticky and plastic; few very fine roots; few fine irregular pores; few faint brown (10YR 4/3) clay films on faces of peds; moderately alkaline; abrupt smooth boundary.

2Bk1—34 to 40 inches; 70 percent yellowish brown (10YR 5/6) and 30 percent very pale brown (10YR 7/4) silt loam, dark yellowish brown (10YR 4/6) moist; massive; slightly hard, very friable, sticky and plastic; very few fine roots; few fine irregular pores; common fine lime filaments; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2Bk2—40 to 48 inches; pale yellow (2.5Y 7/4) silt loam, light olive brown (2.5Y 5/6) moist; massive; slightly hard, friable, sticky and slightly plastic; common fine lime filaments; strongly effervescent; moderately alkaline; gradual smooth boundary.

2Bk3—48 to 60 inches; pale yellow (2.5Y 7/4) silt loam, light olive brown (2.5Y 5/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine lime filaments; slightly effervescent; moderately alkaline.

The mollic epipedon is 10 to 18 inches thick. The particle-size control section is 35 to 45 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 5 percent pebbles.

An E horizon is present in some pedons.

The Bt horizon has value of 4 to 6 dry and 3 to 5 moist, and it has chroma of 4 to 6 dry or moist. It is silty clay loam or silty clay with 0 to 5 percent pebbles. It is mildly alkaline or moderately alkaline.

The 2Bt horizon has hue of 10YR or 2.5Y, value of 4 or 5 dry and 3 or 4 moist, and chroma of 4 to 6 dry or moist. It is silty clay loam or silty clay with 0 to 5 percent pebbles. It is mildly alkaline or moderately alkaline. This horizon is absent in some pedons.

A 2Btk horizon is present in some pedons.

The 2Bk horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 3 to 6 dry or moist. It is 0 to 5 percent pebbles. It is mildly alkaline to strongly alkaline.

Aeneas Series

The Aeneas series consists of very deep, well drained soils on terraces and in depressions between dunes. These soils formed in glacial outwash with loess in the upper part. Slopes are 0 to 10 percent. Elevation is 800 to 1,900 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Aeneas fine sandy loam, 0 to 5 percent slopes, about 2 miles southeast of Monse; 500 feet east and 500 feet north of the southwest corner of sec. 2, T. 30 N., R. 25 E., W.M.:

A1—0 to 2 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine roots; common fine interstitial pores; mildly alkaline; clear smooth boundary.

A2—2 to 10 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common fine

roots; common fine interstitial pores; mildly alkaline; gradual wavy boundary.

Bw—10 to 27 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; few medium and fine interstitial and tubular pores; 5 percent gravel; mildly alkaline; clear wavy boundary.

2C1—27 to 38 inches; light brownish gray (10YR 6/2) sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; 5 percent gravel; mildly alkaline; gradual wavy boundary.

2C2—38 to 60 inches; multicolored sand; single grain; loose, nonsticky and nonplastic; 5 percent gravel; mildly alkaline.

The mollic epipedon is 9 to 12 inches thick. Depth to the 2C horizon is 24 to 38 inches. The profile is neutral or mildly alkaline.

The A horizon has chroma of 2 or 3 dry or moist.

The Bw horizon has value of 5 or 6 dry and chroma of 3 or 4 dry or moist. It is fine sandy loam or sandy loam with 0 to 10 percent gravel.

The 2C horizon has hue of 10YR or 2.5Y. It has value of 6 or 7 dry and 5 or 6 moist and chroma of 2 or 3 moist. It is sand, loamy sand, or loamy fine sand with 0 to 10 percent gravel.

Ahtanum Series

The Ahtanum series consists of soils that are moderately deep to a strongly cemented duripan and are somewhat poorly drained. These soils are on flood plains and in depressions, including backswamps of streams. The soils formed in alluvium derived from volcanic ash and loess. Slopes are 0 to 3 percent. Elevation is 1,100 to 2,800 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 47 to 51 degrees F, and the frost-free season is 110 to 150 days.

Typical pedon of Ahtanum silt loam, 0 to 3 percent slopes, about 5 miles northeast of Coulee Dam; 1,500 feet north and 1,550 feet west of the southeast corner of sec. 22, T. 29 N., R. 31 E., W.M.:

Akn1—0 to 6 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure parting to moderate medium platy; hard, firm, slightly sticky and plastic; many very fine, fine, and medium roots; common very fine tubular pores; few very fine soft masses of lime; violently effervescent; strongly alkaline; clear smooth boundary.

Akn2—6 to 12 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; many dark brown (10YR 3/3) organic stains on faces of peds; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine tubular pores; few very fine soft masses of lime; violently effervescent; strongly alkaline; clear smooth boundary.

Bkn1—12 to 16 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; few very fine soft masses of lime; violently effervescent; strongly alkaline; gradual smooth boundary.

Bkn2—16 to 20 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; few very fine soft masses of lime; violently effervescent; strongly alkaline; abrupt smooth boundary.

2Abkn—20 to 24 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few very fine roots; few very fine tubular pores; few very fine soft masses of lime; violently effervescent; strongly alkaline; abrupt smooth boundary.

2Bkqm—24 to 25 inches; light brownish gray (10YR 6/2) strongly lime- and silica-cemented duripan that crushes to silt loam, dark grayish brown (10YR 4/2) moist; common grayish brown (10YR 4/2) organic stains on surface of duripan; massive; very hard, extremely firm, nonsticky and nonplastic; abrupt smooth boundary.

2Bkg1—25 to 30 inches; gray (10YR 5/1) silt loam, dark grayish brown (10YR 4/2) moist; common fine and medium faint mottles that are grayish brown (10YR 5/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; violently effervescent; strongly alkaline; clear smooth boundary.

2Bkg2—30 to 60 inches; light gray (5Y 7/1) silt loam, light olive gray (2.5Y 6/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; slightly effervescent; strongly alkaline.

Depth to the duripan is 20 to 40 inches. The particle-size control section is less than 5 percent rock

fragments, 5 to 15 percent clay, and less than 15 percent material that is coarser than very fine sand. The sodium adsorption ratio is 15 to 35 in more than one-half of the upper 20 inches, and it decreases as depth increases. A perched water table is present in November through August.

The Akn horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 1 or 2 moist or dry.

The Bkn horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist.

The 2Abkn horizon is absent in some pedons.

The 2Bkqm horizon typically is strongly cemented, but it is weakly cemented in some areas. It is 1 to 8 inches thick.

The 2Bkg horizon has hue of 10YR, 2.5Y, or 5Y, value of 5 to 7 dry and 4 to 6 moist, and chroma of 1 or 2 dry or moist. It is silt loam, very fine sandy loam, or loam.

Aits Series

The Aits series consists of soils that are moderately deep to very deep to dense glacial till and are well drained. These soils are on terraces and on backslopes, footslopes, and toeslopes of hills and mountains. The soils formed dominantly in glacial till with a mantle of volcanic ash, but some areas formed in alluvium derived from glacial till with a mantle of volcanic ash and loess. Slopes are 0 to 40 percent. Elevation is 2,000 to 4,000 feet. The average annual precipitation is 20 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free season is 90 to 120 days.

Typical pedon of Aits silt loam, dry, 5 to 20 percent slopes, about 11 miles southwest of Inchelium; 1,750 feet south and 500 feet west of the northeast corner of sec. 26, T. 32 N., R. 35 E.:

Oe—1.5 inches to 0; partially decomposed organic matter consisting of needles and twigs.

A—0 to 4 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; many fine pores; 5 percent pebbles; slightly acid; clear smooth boundary.

Bw1—4 to 13 inches; light yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; few very fine, fine, and coarse roots; many fine pores; 5 percent pebbles; slightly acid; clear wavy boundary.

2Bw2—13 to 27 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; many fine pores; 20 percent pebbles; slightly acid; gradual wavy boundary.

2Cd—27 to 60 inches; yellowish brown (10YR 5/4) dense glacial till that crushes to gravelly sandy loam, dark brown (10YR 4/3) moist; massive; hard, very friable, nonsticky and nonplastic; few medium roots; few very fine pores; 20 percent pebbles; slightly acid.

The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 5 to 35 percent rock fragments. Depth to dense glacial till is 20 to 60 inches or more. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is silt loam, loam, or very fine sandy loam with 0 to 10 percent pebbles.

The 2Bw horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam, loam, or sandy loam with 5 to 35 percent pebbles and 0 to 5 percent cobbles.

The 2Cd horizon has hue of 2.5Y or 10YR, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is silt loam, sandy loam, or loam with 5 to 35 percent pebbles and 0 to 5 percent cobbles. The sandy substratum phase below a depth of 40 inches is sand or loamy coarse sand and is 15 to 50 percent pebbles and 0 to 5 percent cobbles.

Anders Series

The Anders series consists of moderately deep, well drained soils on plateaus. These soils formed in loess. Slopes are 0 to 8 percent. Elevation is 1,900 to 2,700 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free season is 110 to 150 days.

Typical pedon of Anders silt loam, 0 to 8 percent slopes, about 3 miles northeast of Coulee Dam; 1,800 feet north and 450 feet east of the southwest corner of sec. 33, T. 29 N., R. 31 E., W.M.:

A1—0 to 3 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; common fine irregular pores; 3 percent pebbles; neutral; clear smooth boundary.

A2—3 to 14 inches; brown (10YR 5/3) silt loam, dark

brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; common fine irregular pores; 3 percent pebbles; mildly alkaline; clear wavy boundary.

Bw—14 to 23 inches; yellowish brown (10YR 5/4) gravelly silt loam, brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine irregular pores; 25 percent pebbles; mildly alkaline; abrupt wavy boundary.

2R—23 to 27 inches; basalt bedrock.

Depth to bedrock is 20 to 40 inches. The particle-size control section is 10 to 18 percent clay with 5 to 25 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 15 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or very fine sandy loam with 5 to 25 percent pebbles and 0 to 15 percent cobbles. It is neutral to moderately alkaline.

Andic Cryaquepts

Andic Cryaquepts consist of very deep, poorly drained soils in depressions on moraines on mountains. These soils formed in alluvium with a component of volcanic ash. Slopes are 0 to 3 percent. Elevation is 3,000 to 5,000 feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 40 to 42 degrees F, and the frost-free period is 80 to 100 days.

Reference pedon of Andic Cryaquepts, 0 to 3 percent slopes, about 17 miles north of Nespelem; 2,200 feet north and 300 feet west of the southeast corner of sec. 28, T. 34 N., R. 31 E., W.M.:

Oi—1 inch to 0; needles, twigs, leaves, and mosses.

A—0 to 9 inches; grayish brown (10YR 5/2) silt loam, very dark brown (10YR 2/2) moist; common medium distinct mottles that are dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine irregular pores; medium acid; clear wavy boundary.

2Ab—9 to 17 inches; gray (10YR 5/1) fine sandy loam, very dark gray (10YR 3/1) moist; common fine distinct mottles that are dark yellowish brown (10YR 3/6) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common fine irregular pores; 5 percent pebbles; slightly acid; clear wavy boundary.

2Bg—17 to 22 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine pores; 30 percent pebbles; medium acid; abrupt wavy boundary.

2C1—22 to 28 inches; gray (10YR 6/1) loamy sand, gray (10YR 5/1) moist; massive; soft, very friable, nonsticky and nonplastic; 10 percent pebbles; slightly acid; abrupt wavy boundary.

2C2—28 to 60 inches; multicolored extremely gravelly sand; 1-inch-thick strata of dark gray (10YR 4/1) loamy fine sand at a depth of 30 inches, black (10YR 2/1) moist; single grain; loose, nonsticky and nonplastic; 65 percent pebbles; slightly acid.

These soils have an umbric epipedon or an ochric epipedon. The mantle of material influenced by volcanic ash is 7 to 30 inches thick. The profile is medium acid or slightly acid. An apparent water table is present in December through August.

The A horizon has value of 4 to 6 dry and 2 to 4 moist, and it has chroma of 1 or 2 dry or moist. It is 0 to 10 percent rock fragments.

The 2Ab horizon has value of 4 to 6 dry and 2 to 4 moist, and it has chroma of 1 or 2 dry or moist. It is silt loam, loam, or fine sandy loam with 0 to 15 percent rock fragments. This horizon is absent in some pedons.

The 2Bg horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 1 or 2 dry or moist. It is loam, fine sandy loam, or sandy loam with 0 to 35 percent rock fragments.

The 2C horizon has hue of 10YR or 2.5Y, value of 7 or 8 dry and 3 to 5 moist, and chroma of 1 or 2 dry or moist. Individual sand grains may have chroma of more than 2. The horizon is stratified sand to fine sandy loam with 5 to 70 percent rock fragments.

Annum Series

The Annum series consists of deep, well drained soils on broad summits and shoulders of hills. These soils formed in residuum derived from granitic rock with a mantle of loess. Slopes are 8 to 25 percent. Elevation is 2,400 to 3,200 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Annum silt loam, 8 to 25 percent

slopes, about 7 miles northeast of Coulee Dam; 1,850 feet east and 300 feet south of the northwest corner of sec. 30, T. 29 N., R. 32 E., W.M.:

A1—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, black (10YR 2/1) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine irregular pores; neutral; gradual smooth boundary.

A2—8 to 12 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak moderate and coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine irregular pores; neutral; clear smooth boundary.

BA—12 to 18 inches; brown (10YR 5/3) silt loam, dark brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine roots; common fine irregular pores; very few thin clay films lining pores; neutral; abrupt smooth boundary.

Bt1—18 to 24 inches; yellowish brown (10YR 5/4) silt loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure parting to very fine subangular blocky; hard, friable, sticky and plastic; few very fine roots; few fine tubular pores; few faint clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—24 to 46 inches; strong brown (7.5YR 5/6) clay loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few very fine roots; few fine tubular pores; common faint clay films lining pores and on faces of peds; mildly alkaline; clear smooth boundary.

2Bk—46 to 53 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; few soft masses and filaments of secondary lime; violently effervescent; 20 percent fine granitic pebbles; moderately alkaline; clear smooth boundary.

2Cr—53 to 63 inches; weathered granitic rock.

The mollic epipedon is 10 to 20 inches thick. Depth to weathered bedrock is 40 to 60 inches. The particle-size control section is 0 to 10 percent pebbles and 18 to 35 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist.

The BA and Bt horizons have value of 5 or 6 dry and chroma of 3 or 4 dry or moist. They are silt loam or loam.

The 2Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry, and chroma of 4 or 6 dry. It is loam, clay loam, or sandy clay loam with 0 to 10 percent pebbles. It is neutral or mildly alkaline.

The 2Bk horizon has value of 6 or 7 dry and 4 to 6 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam with 10 to 25 percent pebbles. It is mildly alkaline or moderately alkaline. Some pedons do not have secondary carbonates.

Apex Series

The Apex series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on backslopes, footslopes, and toeslopes of hills and mountains. They formed in glacial till with a mantle of volcanic ash. Slopes are 0 to 65 percent. Elevation is 2,000 to 4,000 feet. The average annual precipitation is 15 to 22 inches, the average annual air temperature is 42 to 46 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Apex silt loam, 5 to 20 percent slopes, about 8 miles northwest of Inchelium; 900 feet north and 100 feet east of the southwest corner of sec. 33, T. 34 N., R. 36 E., W.M.:

Oi—1 inch to 0; needles, twigs, bark, and cones.

A—0 to 3 inches; dark brown (10YR 4/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common fine irregular pores; 5 percent pebbles; slightly acid (NaF pH 9.8); clear wavy boundary.

Bw1—3 to 8 inches; brown (10YR 4/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; 5 percent pebbles; slightly acid (NaF pH 9.8); clear wavy boundary.

Bw2—8 to 13 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; 5 percent pebbles; slightly acid (NaF pH 9.8); clear wavy boundary.

2Bw3—13 to 30 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few

fine, medium, and coarse roots; few fine tubular pores; 20 percent pebbles; slightly acid; gradual wavy boundary.

2Cd—30 to 60 inches; brown (10YR 5/3) dense glacial till that crushes to gravelly sandy loam, dark brown (10YR 4/3) moist; massive; hard, friable, nonsticky and nonplastic; few fine roots; few fine irregular pores; 30 percent pebbles; slightly acid.

The mantle of volcanic ash is 7 to 14 inches thick. The profile is slightly acid or neutral. Depth to dense glacial till is 20 to 40 inches.

The A horizon has value of 3 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam or loam.

The Bw horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam with 0 to 10 percent pebbles.

The 2Bw horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam, loam, or sandy loam with 5 to 30 percent pebbles and 0 to 5 percent cobbles. This horizon is absent in some pedons.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 5 to 35 percent pebbles and 0 to 15 percent cobbles and stones.

Aquic Xerofluvents

Aquic Xerofluvents consist of very deep, moderately well drained and somewhat poorly drained soils on flood plains and low stream terraces. These soils formed in recent alluvium that has been reworked by glacial outwash in some areas. Slopes are 0 to 3 percent. Elevation is 1,300 to 4,000 feet. The average annual precipitation is 14 to 25 inches, the average annual air temperature is 43 to 49 degrees F, and the frost-free period is 90 to 130 days.

Reference pedon of Aquic Xerofluvents, moist, 0 to 3 percent slopes, about 13 miles northwest of Inchelium; 1,700 feet north and 1,600 feet east of the southwest corner of sec. 12, T. 34 N., R. 35 E., W.M.:

A—0 to 1 inch; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; 5 percent pebbles; slightly acid; abrupt wavy boundary.

AC—1 inch to 5 inches; grayish brown (10YR 5/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; few fine tubular pores; 5 percent pebbles; slightly acid; clear wavy boundary.

C1—5 to 15 inches; multicolored very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine roots; 50 percent pebbles; neutral; abrupt smooth boundary.

C2—15 to 25 inches; light gray (10YR 7/2) sand, dark grayish brown (2.5Y 4/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; 10 percent pebbles; neutral; abrupt smooth boundary.

C3—25 to 35 inches; light gray (2.5Y 7/2) silt loam, dark grayish brown (2.5Y 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; 5 percent pebbles; neutral; abrupt smooth boundary.

C4—35 to 40 inches; light brownish gray (2.5Y 6/2) very gravelly loamy sand, dark grayish brown (2.5Y 4/2) moist; single grain; loose, nonsticky and nonplastic; 35 percent pebbles; neutral; abrupt smooth boundary.

C5—40 to 52 inches; light brownish gray (2.5Y 6/2) gravelly loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; 15 percent pebbles; neutral; abrupt smooth boundary.

C6—52 to 60 inches; brown (10YR 5/3) very gravelly loamy coarse sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; 40 percent pebbles; neutral.

Depth to the stratified C horizon is 5 to 50 inches or more. The profile is slightly acid or neutral. An apparent water table is present in January through July. Occasional periods of flooding occur in February through May.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam, fine sandy loam, or sandy loam with 0 to 15 percent pebbles.

The C horizon has hue of 10YR, 2.5Y, or 5Y, value of 5 to 7 dry and 3 to 6 moist, and chroma of 1 to 4 dry and 2 to 6 moist. Some pedons have mottles below a depth of 15 inches. The horizon is stratified silt loam to coarse sand with 5 to 60 percent pebbles and 0 to 10 percent cobbles.

Badge Series

The Badge series consists of very deep, well drained soils on footslopes and backslopes of plateau escarpments. These soils formed in colluvium derived from basalt mixed with loess. Slopes are 25 to 65

percent. Elevation is 1,500 to 2,200 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 51 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Badge very stony silt loam, 25 to 65 percent slopes, about 6 miles northeast of Bridgeport; 2,000 feet south and 150 feet east of the northwest corner of sec. 30, T. 30 N., R. 26 E.:

A—0 to 10 inches; dark grayish brown (10YR 4/2) very stony silt loam, very dark brown (10YR 2/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; many very fine tubular pores; 15 percent pebbles, 5 percent cobbles, and 15 percent stones; mildly alkaline; clear wavy boundary.

Bt1—10 to 23 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; common fine and very fine roots; many very fine tubular and interstitial pores; few faint clay films on faces of peds; 30 percent pebbles, 5 percent cobbles, and 5 percent stones; mildly alkaline; gradual wavy boundary.

Bt2—23 to 38 inches; brown (10YR 5/3) very stony clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; common fine and medium tubular and interstitial pores; few faint clay films on faces of peds; 35 percent pebbles, 10 percent cobbles, and 10 percent stones; mildly alkaline; gradual wavy boundary.

C—38 to 60 inches; light yellowish brown (10YR 6/4) extremely cobbly silt loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; 40 percent pebbles, 20 percent cobbles, 5 percent stones, and 5 percent boulders; mildly alkaline.

The mollic epipedon is 10 to 14 inches thick. The particle-size control section is 35 to 60 percent rock fragments, dominantly basalt. The solum is neutral or mildly alkaline.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist.

The Bt horizon has value of 4 or 5 dry and chroma of 3 dry or moist. It is clay loam or loam with 30 to 40 percent pebbles, 0 to 35 percent cobbles, and 5 to 15 percent stones.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loam or silt loam with 10 to 35 percent cobbles and 25 to 40 percent pebbles.

Bakeoven Series

The Bakeoven series consists of very shallow, well drained soils on plateaus. These soils formed in residuum and colluvium derived from basalt with a component of loess. Elevation is 1,800 to 2,900 feet. Slopes are 0 to 30 percent. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Bakeoven very cobbly silt loam, 2 to 25 percent slopes, about 1.5 miles east of Coulee Dam; 50 feet south and 1,600 feet west of the northeast corner of sec. 5, T. 28 N., R. 31 E.:

A—0 to 3 inches; brown (10YR 5/3) very cobbly silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; common fine tubular pores; 15 percent pebbles and 35 percent cobbles; neutral; clear wavy boundary.

Bw—3 to 7 inches; brown (10YR 5/3) very cobbly silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; common fine tubular pores; 20 percent pebbles and 25 percent cobbles; neutral; abrupt wavy boundary.

R—7 to 11 inches; basalt bedrock.

Depth to bedrock is 4 to 10 inches. The profile is 40 to 75 percent rock fragments. It is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 10 to 20 percent pebbles, 25 to 40 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is loam or silt loam with 0 to 30 percent pebbles, 25 to 50 percent cobbles, and 0 to 5 percent stones.

Baldknob Series

The Baldknob series consists of shallow, well drained soils on glacially scoured summits, shoulders, and backslopes of hills and mountains. These soils formed in residuum and colluvium derived dominantly from rhyodacite and quartz latite with some glacial till and a component of volcanic ash and loess. Slopes are 5 to 70 percent. Elevation is 2,200 to 4,200 feet.

The average annual precipitation is 15 to 22 inches, the average annual air temperature is 42 to 46 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Baldknob very stony loam in an area of Baldknob-Thout, dry-Rock outcrop complex, 20 to 65 percent slopes, about 15 miles northeast of Nespelem; 2,000 feet north and 400 feet east of the southwest corner of sec. 13, T. 33 N., R. 31 E., W.M.:

A—0 to 4 inches; brown (10YR 5/3) very stony loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; common fine tubular pores; 30 percent pebbles, 5 percent cobbles, and 10 percent stones; slightly acid; clear wavy boundary.

Bw1—4 to 9 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine tubular pores; 40 percent pebbles and 15 percent cobbles; slightly acid; gradual wavy boundary.

Bw2—9 to 14 inches; yellowish brown (10YR 5/4) extremely gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; 45 percent pebbles and 20 percent cobbles; slightly acid; abrupt wavy boundary.

R—14 to 18 inches; rhyodacite.

Depth to bedrock is 10 to 20 inches. The mollic epipedon is 7 to 12 inches thick. The particle-size control section is 8 to 18 percent clay with 35 to 70 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5 dry and 2 or 3 moist, and chroma of 2 to 4 dry and 2 or 3 moist. It is 10 to 30 percent pebbles, 5 to 15 percent cobbles, and 5 to 15 percent stones.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is 25 to 50 percent pebbles, 5 to 20 percent cobbles, and 0 to 5 percent stones.

Barnellcreek Series

The Barnellcreek series consists of soils that are deep to dense glacial till and are moderately well drained. These soils are on footslopes and toeslopes of mountains. They formed in volcanic ash over glacial till. Slopes are 5 to 15 percent. Elevation is 3,200 to 4,600 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free season is 90 to 120 days.

Typical pedon of Barnellcreek silt loam, 5 to 15 percent slopes, about 8 miles northeast of Disautel; 2,400 feet south and 1,900 feet east of the northwest corner of sec. 11, T. 34 N., R. 29 E., W.M.:

Oi—1 inch to 0; needles, leaves, twigs, and cones.

A1—0 to 5 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common fine irregular pores; 10 percent pebbles; neutral; clear wavy boundary.

A2—5 to 26 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; common fine irregular pores; 10 percent pebbles; neutral; gradual wavy boundary.

2Bw—26 to 42 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; few fine tubular pores; 20 percent pebbles; neutral; clear wavy boundary.

2Cd—42 to 60 inches; light gray (2.5Y 7/2) dense glacial till that crushes to very gravelly sandy loam, grayish brown (2.5Y 5/2) moist; few fine faint mottles that are strong brown (7.5YR 4/6) when moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine and fine roots; few fine tubular pores; 30 percent pebbles and 10 percent cobbles; neutral.

Depth to dense glacial till is 40 to 60 inches. The mollic epipedon is 20 to 35 inches thick. The upper part of the particle-size control section is 8 to 15 percent clay and 0 to 15 percent rock fragments, and the lower part is 5 to 15 percent clay and 15 to 35 percent rock fragments. An apparent water table is present in January through May.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 15 percent pebbles.

The 2Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry. It is loam or sandy loam with 15 to 25 percent pebbles and 0 to 5 percent cobbles.

The 2Cd horizon has value of 5 or 6 moist and chroma of 2 or 3 dry or moist. It is 20 to 40 percent

pebbles, 5 to 20 percent cobbles, and 0 to 5 percent stones. It is slightly acid or neutral.

Bearspring Series

The Bearspring series consists of very deep, well drained soils on footslopes and backslopes of hills and mountains. These soils formed in colluvium and residuum derived from granitic rock with some loess and volcanic ash. Slopes are 20 to 65 percent. Elevation is 1,900 to 4,600 feet. The average annual precipitation is 15 to 20 inches, the average annual air temperature is 43 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Bearspring cobbly loam, 40 to 65 percent slopes, about 7 miles northeast of Nespelem; 2,300 feet south and 400 feet west of the northeast corner of sec. 12, T. 30 N., R. 31 E., W.M.:

Oi—1 inch to 0; needles, leaves, and bark.

A1—0 to 6 inches; grayish brown (10YR 5/2) cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common fine irregular pores; 15 percent pebbles and 15 percent cobbles; neutral; clear wavy boundary.

A2—6 to 11 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common fine irregular pores; 25 percent pebbles; slightly acid; clear wavy boundary.

Bw1—11 to 19 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine irregular pores; 30 percent pebbles; slightly acid; abrupt wavy boundary.

Bw2—19 to 27 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine roots; common fine irregular pores; 35 percent pebbles and 5 percent cobbles; slightly acid; gradual wavy boundary.

C1—27 to 50 inches; pale brown (10YR 6/3) very cobbly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common fine roots; few fine tubular pores; 10 percent pebbles and 40 percent cobbles; slightly acid; clear wavy boundary.

C2—50 to 60 inches; light yellowish brown (10YR 6/9) extremely gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; 75 percent pebbles; neutral.

The profile is slightly acid or neutral. The particle-size control section is 7 to 15 percent clay with 35 to 50 percent angular granitic rock fragments.

The A horizon has value of 4 or 5 dry and chroma of 1 to 3 dry or moist. It is loam or cobbly loam with 5 to 25 percent pebbles, 0 to 25 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is loam or sandy loam with 15 to 45 percent pebbles, 0 to 20 percent cobbles, and 0 to 5 percent stones.

The C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is dominantly sandy loam or coarse sandy loam with 5 to 75 percent pebbles, 0 to 40 percent cobbles, and 0 to 5 percent stones. The lower part is loamy coarse sand in some pedons.

Bernhill Series

The Bernhill series consists of very deep, well drained soils on ground moraines, till plains, and toeslopes of hills. These soils formed in glacial till derived from mixed sources, including glacial lake sediment, with some volcanic ash and loess. Slopes are 0 to 20 percent. Elevation is 1,500 to 3,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Bernhill loam, dry, 5 to 20 percent slopes, about 2 miles northeast of Disautel; 1,900 feet north and 2,000 feet west of the southeast corner of sec. 8, T. 33 N., R. 29 E., W.M.:

Oi—1 inch to 0; ponderosa pine needles, twigs, and cones.

A—0 to 4 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

Bw—4 to 14 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

2EB—14 to 27 inches; light gray (10YR 7/2) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; few fine tubular pores; 10 percent pebbles; neutral; clear wavy boundary.

2Bt—27 to 36 inches; light yellowish brown (2.5Y 6/4) clay loam, olive brown (2.5Y 4/4) moist; moderate medium angular blocky structure; hard, firm, sticky and slightly plastic; common moderately thick clay films on faces of peds and in pores; common very fine and fine roots and few medium and coarse roots; few fine tubular pores; 10 percent pebbles; neutral; clear wavy boundary.

2C—36 to 60 inches; light gray (2.5Y 7/2) gravelly sandy loam, grayish brown (2.5Y 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 20 percent pebbles and 10 percent cobbles; neutral.

The particle-size control section is 18 to 35 percent clay and 10 to 20 percent rock fragments. It is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam, fine sandy loam, or silt loam with 0 to 15 percent pebbles.

The 2EB horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 or 3 dry or moist. It is loam or fine sandy loam with 5 to 25 percent pebbles.

The 2Bt horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loam, silt loam, or clay loam with 10 to 35 percent pebbles.

The 2C horizon has value of 6 or 7 dry and 5 or 6 moist, and it has chroma of 2 to 4 dry or moist. It is loam, fine sandy loam, or sandy loam with 15 to 30 percent pebbles and 0 to 10 percent cobbles.

Beverly Series

The Beverly series consists of very deep, somewhat excessively drained soils on alluvial fans. These soils formed in recent alluvium. Slopes are 2 to 25 percent. Elevation is 800 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Beverly gravelly loamy sand, 2 to 25 percent slopes, about 13 miles southwest of Nespelem; 1,050 feet east and 1,400 feet north of the southwest corner of sec. 12, T. 30 N., R. 28 E., W.M.:

A—0 to 6 inches; brown (10YR 5/3) gravelly loamy sand, dark brown (10YR 3/3) moist; weak coarse granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few fine tubular and interstitial pores; 20 percent pebbles; neutral; clear smooth boundary.

C1—6 to 17 inches; pale brown (10YR 6/3) gravelly loamy sand, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few fine tubular and interstitial pores; 30 percent pebbles; neutral; clear smooth boundary.

C2—17 to 31 inches; pale brown (10YR 6/3) very gravelly sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; common fine and medium tubular pores; 45 percent pebbles and 5 percent cobbles; neutral; gradual wavy boundary.

C3—31 to 60 inches; multicolored extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 65 percent pebbles and 5 percent cobbles; neutral.

The particle-size control section is 40 to 70 percent rock fragments. It is neutral or mildly alkaline.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 15 to 30 percent pebbles and 0 to 10 percent cobbles.

The C1 horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loamy sand or loamy fine sand with 15 to 30 percent pebbles and 0 to 10 percent cobbles.

The C2 has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. The C3 horizon is multicolored. They are sand or coarse sand with 40 to 65 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones.

Bisbee Series

The Bisbee series consists of very deep, somewhat excessively drained soils on terraces and terrace escarpments. These soils formed in sandy glacial outwash locally reworked by wind. Slopes are 0 to 40 percent. Elevation is 1,400 to 3,400 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 46 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Bisbee loamy fine sand, warm, 0 to 20 percent slopes, about 9 miles northeast of Nespelem; 10 feet south and 2,200 feet west of the northeast corner of sec. 2, T. 31 N., R. 30 E., W.M.:

Oi—1 inch to 0; twigs, needles, and leaves.
A—0 to 5 inches; brown (10YR 5/3) loamy fine sand, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine interstitial pores; 5 percent pebbles; slightly acid; clear wavy boundary.
C1—5 to 22 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.
C2—22 to 40 inches; very pale brown (10YR 7/3) loamy fine sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common very fine, fine, and medium roots; 5 percent pebbles; neutral; clear wavy boundary.
C3—40 to 60 inches; light gray (2.5Y 7/2) loamy fine sand, light brownish gray (2.5Y 6/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; 5 percent pebbles; neutral.

The particle-size control section is 0 to 10 percent pebbles, and the fine-earth fraction averages less than 15 percent coarse sand and very coarse sand. The profile is slightly acid or neutral.

The A horizon has chroma of 2 or 3 moist or dry.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is loamy fine sand, fine sand, or sand.

Boesel Series

The Boesel series consists of very deep, moderately well drained soils on stream terraces and flood plains. These soils formed in recent alluvium. Slopes are 0 to 3 percent. Elevation is 1,600 to 3,200 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Boesel fine sandy loam, 0 to 3 percent slopes, about 23 miles northeast of Nespelem; 500 feet north and 2,300 feet east of the southwest corner of sec. 11, T. 34 N., R. 32 E., W.M.:

Ap—0 to 8 inches; dark brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; common fine tubular pores; 5 percent pebbles; neutral; clear smooth boundary.
A—8 to 13 inches; dark brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; common fine tubular pores; 10 percent pebbles; neutral; clear wavy boundary.
AC—13 to 20 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak medium prismatic structure; slightly hard, friable, slightly sticky and nonplastic; many very fine roots, common fine roots, and few medium roots; few fine tubular pores; 10 percent pebbles; neutral; abrupt wavy boundary.
C1—20 to 29 inches; brown (10YR 5/3) gravelly loamy sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; 25 percent pebbles; neutral; clear wavy boundary.
C2—29 to 60 inches; brown (10YR 5/3) very gravelly loamy sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; 50 percent pebbles; neutral.

Depth to the C horizon is 20 to 33 inches. The upper part of the particle-size control section is 0 to 15 percent pebbles, and the lower part is 35 to 50 percent rock fragments. An apparent water table is present in February through May. Occasional periods of flooding occur in February through May.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The AC horizon has chroma of 2 or 3 dry or moist. It is fine sandy loam or sandy loam with 0 to 10 percent pebbles.

The C horizon has hue of 10YR and value of 5 or 6 dry and 3 or 4 moist. The upper part of the horizon is loamy sand with 5 to 25 percent pebbles, and the lower part is loamy sand, sand, or coarse sand with 35 to 60 percent pebbles and 0 to 5 percent cobbles. The lower part has faint to prominent mottles in some pedons.

Bong Series

The Bong series consists of very deep, somewhat excessively drained soils on terraces and terrace escarpments. These soils formed in glacial outwash with a minor amount of loess. Slopes are 0 to 70 percent. Elevation is 1,500 to 3,700 feet. The average annual precipitation is 15 to 18 inches, the average

annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Bong sandy loam, 0 to 30 percent slopes, about 10 miles northeast of Omak; 1,050 feet south and 1,575 feet east of the northwest corner of sec. 8, T. 34 N., R. 28 E., W.M.:

Oi—1 inch to 0; needles, twigs, and cones.
A—0 to 8 inches; dark grayish brown (10YR 4/2) sandy loam, black (10YR 2/1) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common fine tubular pores; 2 percent pebbles; neutral; abrupt smooth boundary.
Bw—8 to 17 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; many very fine roots, common fine roots, and few medium roots; common fine tubular pores; 10 percent pebbles; neutral; abrupt smooth boundary.
BC—17 to 24 inches; light yellowish brown (10YR 6/4) gravelly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; many very fine roots and few fine and medium roots; common fine tubular pores; 25 percent pebbles and 5 percent cobbles; neutral; abrupt smooth boundary.
C—24 to 60 inches; light yellowish brown (10YR 6/4) sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 5 percent pebbles; neutral.

The mollic epipedon is 8 to 16 inches thick. Depth to the BC or C horizon is 15 to 24 inches. The particle-size control section is 5 to 30 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 to 3 moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. The horizon is sandy loam or coarse sandy loam with 0 to 10 percent pebbles.

The BC horizon has hue of 10YR or 2.5Y and chroma of 3 or 4 dry or moist. It is loamy sand, loamy coarse sand, or sand with 5 to 25 percent pebbles and 0 to 15 percent cobbles. This horizon is absent in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loamy sand, loamy coarse sand, or sand with 5 to 25 percent pebbles and 0 to 15 percent cobbles.

Borgeau Series

The Borgeau series consists of very deep, well drained soils on backslopes and footslopes of hills. These soils formed in glacial till and colluvium derived from metamorphic rock with some loess and volcanic ash. Slopes are 8 to 65 percent. Elevation is 1,700 to 3,000 feet. The average annual precipitation is 15 to 18 inches, the average air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Borgeau loam, 8 to 30 percent slopes, about 12 miles north of Inchelium; 2,000 feet south and 1,500 feet west of the northeast corner of sec. 9, T. 34 N., R. 36 E.:

Oe—1 inch to 0; partially decomposed organic material.
A—0 to 9 inches; very dark grayish brown (10YR 3/2) loam, black (10YR 2/1) moist; moderate very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine irregular pores; 10 percent pebbles; neutral; clear smooth boundary.
Bw—9 to 17 inches; brown (10YR 4/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine irregular pores; 35 percent pebbles and 10 percent cobbles; slightly acid; gradual wavy boundary.
C1—17 to 34 inches; light yellowish brown (2.5Y 6/4) very gravelly loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; 40 percent pebbles and 15 percent cobbles; medium acid; gradual wavy boundary.
C2—34 to 60 inches; light yellowish brown (2.5Y 6/4) extremely gravelly loam, light olive brown (2.5Y 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; 50 percent pebbles and 15 percent cobbles; slightly acid.

The mollic epipedon is 7 to 17 inches thick. The particle-size control section is 40 to 65 percent rock fragments and 10 to 18 percent clay.

The A horizon has value of 3 or 4 dry and chroma of

1 to 3 dry or moist. It is 0 to 15 percent rock fragments.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 or 5 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is loam or sandy loam with 20 to 40 percent pebbles and 5 to 10 percent cobbles.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is loam or sandy loam with 35 to 50 percent pebbles, 15 to 25 percent cobbles, and 0 to 5 percent stones.

Borosaprists

Borosaprists consist of very deep, very poorly drained soils in lake basins and depressions on till plains, ground moraines, and terraces. These soils formed in decomposed organic material over alluvium or glacial lake sediment. Slopes are 0 to 2 percent. Elevation is 2,800 to 5,000 feet. The average annual precipitation is 17 to 30 inches, the average annual air temperature is 41 to 44 degrees F, and the frost-free period is 80 to 100 days.

Reference pedon of Borosaprists, 0 to 2 percent slopes, about 21 miles north of Nespelem; 1,700 feet north and 1,000 feet west of the southeast corner of sec. 11, T. 34 N., R. 31 E., W.M.:

Oe—0 to 8 inches; grayish brown (10YR 5/2) mucky peat, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, nonsticky and nonplastic; 75 percent fiber, 40 percent rubbed; many very fine, fine, and medium roots; few fine tubular pores; slightly acid; clear smooth boundary.

Oa—8 to 18 inches; very dark gray (10YR 3/1) muck, black (10YR 2/1) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; 45 percent fiber, 15 percent rubbed; many very fine, fine, and medium roots; few fine tubular pores; slightly acid; abrupt smooth boundary.

A—18 to 34 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; neutral; abrupt smooth boundary.

C1g—34 to 44 inches; light brownish gray (10YR 6/2) silt loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; neutral; abrupt smooth boundary.

C2g—44 to 55 inches; light gray (10YR 7/2) fine sandy loam, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; neutral; abrupt smooth boundary.

Oa—55 to 60 inches; black (10YR 2/1) muck, black (10YR 2/1) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; 30 percent fiber, 10 percent rubbed; few very fine roots; few fine tubular pores; neutral.

These soils are saturated in the moisture control section in winter through midsummer. Depth to mineral soil material is 16 to 60 inches or more. The profile is slightly acid or neutral. These soils are ponded in February through May. An apparent water table is present throughout the year.

The Oe horizon is absent in some pedons.

The Oa horizon has value of 2 or 3 dry and chroma of 1 or 2 dry or moist.

The A horizon has value of 3 or 4 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist. It is stratified silt loam to coarse sand with 0 to 45 percent rock fragments, most of which are gravel-sized. This horizon is absent in some pedons.

The Cg horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 1 or 2 dry or moist. It is stratified silt loam to coarse sand with 0 to 45 percent pebbles.

Bossburg Series

The Bossburg series consists of very deep, very poorly drained soils in backswamps of flood plains and in depressions. These soils formed in alluvium derived from volcanic ash. Slopes are 0 to 2 percent. Elevation is 1,600 to 2,800 feet. The average annual precipitation is 12 to 18 inches, the average annual air temperature is 45 to 49 degrees F, and the frost-free period is 100 to 150 days.

Typical pedon of Bossburg muck, 0 to 2 percent slopes, about 3 miles east of Elmer City; 1,100 feet south and 500 feet east of the northwest corner of sec. 23, T. 29 N., R. 31 E., W.M.:

Oap—0 to 6 inches; dark gray (10YR 4/1) muck, black (10YR 2/1) moist; about 15 percent fiber, less than 5 percent rubbed; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; neutral; abrupt smooth boundary.

2Ag—6 to 13 inches; gray (10YR 5/1) silt loam, dark gray (10YR 4/1) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine roots;

common fine tubular pores; neutral; clear smooth boundary.
2C1g—13 to 18 inches; light gray (10YR 7/1) silt loam, dark grayish brown (10YR 4/2) moist; massive; hard, friable, slightly sticky and nonplastic; few fine roots; few fine tubular pores; neutral; clear smooth boundary.
2C2g—18 to 24 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; common medium distinct mottles that are light yellowish brown (2.5Y 6/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few fine roots; few fine tubular pores; neutral; clear wavy boundary.
2C3g—24 to 29 inches; white (2.5Y 8/2) silt loam, light brownish gray (2.5Y 6/2) moist; common medium faint mottles that are light yellowish brown (2.5Y 6/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; neutral; clear wavy boundary.
2C4g—29 to 45 inches; light gray (10YR 7/2) fine sandy loam, pale brown (10YR 6/3) moist; common medium distinct mottles that are yellowish brown (10YR 6/4) moist; massive; soft, very friable, nonsticky and nonplastic; neutral; clear wavy boundary.
2C5g—45 to 60 inches; white (10YR 8/2) very fine sandy loam, light gray (10YR 7/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; neutral.

These soils are saturated in the moisture control section in winter through midsummer. The organic surface horizon is 6 to 10 inches thick. The profile is neutral or mildly alkaline. An apparent water table is present throughout the year. Frequent periods of flooding occur in February through May.

The 2A horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 1 or 2 dry or moist.

The 2C horizon has hue of 10YR or 2.5Y, value of 7 or 8 dry and 4 to 7 moist, and chroma of 1 to 3 dry or moist. It is stratified fine sandy loam to silt loam.

Broadax Series

The Broadax series consists of very deep, well drained soils on broad summits of hills and plateaus. These soils formed in loess. Elevation is 2,500 to 2,900 feet. Slopes are 0 to 15 percent. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Broadax silt loam, dry, 0 to 8 percent slopes, about 6 miles east of Coulee Dam; 1,950 feet north and 550 feet west of the southeast corner of sec. 25, T. 29 N., R. 31 E., W.M.:

Ap1—0 to 3 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; common fine tubular pores; neutral; clear smooth boundary.
Ap2—3 to 11 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; common fine tubular pores; neutral; abrupt smooth boundary.
BA—11 to 17 inches; brown (10YR 5/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common fine tubular pores; mildly alkaline; clear smooth boundary.
Btk1—17 to 28 inches; yellowish brown (10YR 5/4) silt loam, brown (10YR 4/4) moist; moderate medium subangular blocky structure; very hard, very firm, sticky and slightly plastic; common very fine roots; few fine tubular pores; common very fine continuous pores; common faint clay films on faces of peds and in pores; thin lime accumulations on faces of peds; violently effervescent; moderately alkaline; clear smooth boundary.
Btk2—28 to 38 inches; yellowish brown (10YR 5/4) silt loam, brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few very fine roots; few fine tubular pores; common very fine and few fine continuous pores; common faint clay films on faces of peds and in pores; thin lime accumulations on faces of peds; slightly effervescent; mildly alkaline; clear wavy boundary.
Bk1—38 to 53 inches; yellowish brown (10YR 5/4) silt loam, brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; common very fine tubular pores; strongly effervescent; few soft powdery lime accumulations in cracks and seams; moderately alkaline; clear wavy boundary.
Bk2—53 to 60 inches; yellowish brown (10YR 5/4) silt loam, brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine irregular pores; violently effervescent; few soft powdery lime accumulations in cracks and seams; mildly alkaline.

The mollic epipedon is 10 to 20 inches thick.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is slightly acid or neutral.

The BA horizon is absent in some pedons. This horizon, where present, has chroma of 3 or 4 dry or moist. It is moderately alkaline or mildly alkaline.

The Btk horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 to 6 dry and 3 or 4 moist. It is silt loam or silty clay loam with 15 to 30 percent clay. It is mildly alkaline or moderately alkaline.

The Bk horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is mildly alkaline or moderately alkaline.

Brusher Series

The Brusher series consists of very deep, well drained soils on footslopes and toeslopes of hills and mountains. These soils formed in highly weathered colluvium, residuum, and valley fill derived from granitic rock or porphyritic volcanic rock with a mantle of volcanic ash. Slopes are 0 to 40 percent. Elevation is 2,300 to 4,000 feet. The average annual precipitation is 16 to 25 inches, the average annual air temperature is 42 to 45 degrees F, and the frost-free period is 90 to 120 day.

Typical pedon of Brusher silt loam, moist, 5 to 35 percent slopes, about 5 miles northwest of Keller; 1,600 feet south and 1,000 feet east of the northwest corner of sec. 35, T. 31 N., R. 32 E., W.M.:

Oi—5 inches to 0; needles, leaves, and twigs.

A1—0 to 1 inch; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots and common coarse roots; common fine tubular pores; neutral (NaF pH 10.5); abrupt smooth boundary.

A2—1 inch to 5 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common fine tubular pores; neutral (NaF pH 11.0); clear wavy boundary.

Bw—5 to 17 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; common fine tubular pores; neutral (NaF pH 10.5); clear irregular boundary.

2E—17 to 24 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; few fine tubular pores; neutral (NaF pH 9.6); neutral; abrupt wavy boundary.

2B/E—24 to 37 inches; 60 percent yellowish brown (10YR 5/4) loam (B part), dark brown (10YR 3/3) moist, and 40 percent pale brown (10YR 6/3) sandy loam (E part), brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; few very fine, fine, and medium roots; few fine tubular pores; common faint clay films on faces of peds; neutral (NaF pH less than 9.2); clear wavy boundary.

2E/B—37 to 51 inches; 80 percent very pale brown (10YR 7/3) sandy loam (E part), brown (10YR 4/3) moist, and 20 percent yellowish brown (10YR 5/4) sandy loam (B part), dark yellowish brown (10YR 4/9) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; colloid stains on mineral grains; neutral (NaF pH less than 9.2); clear wavy boundary.

2Bt—51 to 56 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate medium and thick platy structure; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and lining pores; neutral (NaF pH less than 9.2); abrupt smooth boundary.

2C—56 to 60 inches; multicolored gravelly coarse sand; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 25 percent fine pebbles; neutral (NaF pH less than 9.2).

The mantle of volcanic ash is 14 to 26 inches thick. The solum is more than 40 inches thick. The particle-size control section is 18 to 35 percent clay and 0 to 25 percent rock fragments, mostly fine pebbles. The profile is slightly acid or neutral.

The A horizon has value of 4 to 6 dry and chroma of 2 or 3 dry or moist. It is 0 to 15 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam, loam, or very fine sandy loam with 0 to 15 percent pebbles.

The 2E horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is loam or sandy loam with 0 to 20 percent pebbles. This horizon is absent in some pedons.

The B part of the 2B/E and 2E/B horizons has value of 5 or 6 dry and 3 to 6 moist, and it has chroma of 3 to 6 dry or moist. The E part has value of 6 or 7 dry and 4 to 6 moist, and it has chroma of 2 or 3 dry or

moist. The 2B/E and 2E/B horizons are loam or sandy loam with 0 to 20 percent pebbles. These horizons are absent in some pedons.

The 2Bt horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 3 to 6 dry or moist. It is clay loam, loam, or sandy loam with 0 to 30 percent pebbles.

A 2BCt or 2BC horizon is present in some pedons.

The 2C horizon is multicolored. It is coarse sandy loam, loamy coarse sand, or coarse sand with 5 to 30 percent pebbles.

Buhrig Series

The Buhrig series consists of moderately deep, well drained soils on ridges, shoulders, and backslopes of mountains. These soils formed in residuum and colluvium derived from granitic and metasedimentary rock with a mantle of volcanic ash and loess. Slopes are 20 to 65 percent. Elevation is 4,000 to 6,500 feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 39 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Buhrig very stony loam, 40 to 65 percent slopes, about 7 miles northwest of Disautel; 1,700 feet east and 2,300 feet south of the northwest corner of sec. 14, T. 34 N., R. 28 E., W.M.:

Oi—2 inches to 1 inch; needles, mosses, and twigs.
Oe—1 inch to 0; partially decomposed organic matter.
A—0 to 7 inches; light yellowish brown (10YR 6/4) very stony loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; common fine irregular pores; 20 percent pebbles, 25 percent cobbles, and 5 percent stones; medium acid; clear wavy boundary.
Bw—7 to 18 inches; light yellowish brown (10YR 6/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; few fine tubular pores; 15 percent pebbles, 25 percent cobbles, and 15 percent stones; medium acid; clear wavy boundary.
C—18 to 32 inches; light yellowish brown (2.5Y 6/4) very cobbly sandy loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; few fine tubular pores; 10 percent pebbles, 25 percent cobbles, and 15 percent stones; medium acid; abrupt wavy boundary.
R—32 to 36 inches; gneiss bedrock.

Depth to bedrock is 20 to 40 inches. The particle-size control section is 5 to 15 percent clay and 35 to 80 percent rock fragments. The profile is medium acid to neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is very stony loam or silt loam with 0 to 15 percent stones, 0 to 5 percent cobbles, and 0 to 30 percent pebbles.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is loam, silt loam, or sandy loam with 10 to 40 percent pebbles, 10 to 25 percent cobbles, and 15 to 25 percent stones.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is loam or sandy loam with 10 to 30 percent pebbles, 15 to 35 percent cobbles, and 15 to 25 percent stones. The shaly substratum phase is 10 to 35 percent pebbles, 20 to 50 percent channers, and 5 to 20 percent flagstones.

Calcic Pachic Haploxerolls

Calcic Pachic Haploxerolls consist of deep and very deep, moderately well drained soils in closed depressions. These soils formed in loess-influenced slope alluvium that overlies reworked glaciofluvial deposits in some areas. Slopes are 3 to 20 percent. Elevation is 1,500 to 2,600 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Reference pedon of Calcic Pachic Haploxerolls in an area of Achimin-Calcic Pachic Haploxerolls complex, 3 to 30 percent slopes, about 16 miles northeast of Bridgeport; 500 feet south and 50 feet east of the northwest corner of sec. 6, T. 30 N., R. 28 E., W.M.:

A—0 to 10 inches; dark grayish brown (10YR 3/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and few fine roots; 5 percent pebbles; neutral; clear wavy boundary.
AB—10 to 24 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and few fine roots; common fine irregular pores;

5 percent pebbles; neutral; gradual wavy boundary.
Bw1—24 to 36 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and few fine roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.
Bw2—36 to 42 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; few fine tubular pores; 5 percent pebbles; mildly alkaline; clear wavy boundary.
Bk1—42 to 50 inches; yellowish brown (10YR 5/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine roots; few fine tubular pores; 5 percent pebbles; slightly effervescent; soft powdery lime filaments lining pores and in seams; strongly alkaline; clear wavy boundary.
Bk2—50 to 60 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and nonplastic; 5 percent pebbles; slightly effervescent; soft powdery lime filaments lining pores and in seams; moderately alkaline.

The mollic epipedon is 20 to 28 inches thick. Depth to secondary carbonates is 20 to 43 inches. Depth to bedrock is 40 to 60 inches or more. The particle-size control section is coarse-loamy, coarse-silty, fine-silty, or fine-loamy. An apparent water table is present in February through July.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 15 percent pebbles.

The AB horizon is absent in some pedons.

The Bw horizon, where present, has value of 4 to 6 dry and 3 or 4 moist. It is fine sandy loam, loam, or silt loam with 0 to 15 percent pebbles. It is neutral or mildly alkaline.

The Bk horizon has hue of 10YR or 2.5Y, value of 4 to 6 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. Mottles are present below a depth of about 30 inches. The horizon is silt loam, fine sandy loam, or silty clay loam with 0 to 25 percent pebbles. A weakly cemented hardpan is at a depth of 40 to 60 inches in some pedons. The horizon is moderately alkaline or strongly alkaline.

Canteen Series

The Canteen series consists of deep, well drained soils on footslopes and backslopes of hills and mountains. These soils formed in colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess. Slopes are 20 to 65 percent. Elevation is 2,100 to 4,600 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 41 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Canteen silt loam, 40 to 65 percent slopes, about 4 miles west of Keller; 1,050 feet north and 1,750 feet east of the southwest corner of sec. 22, T. 30 N., R. 34 E., W.M.:

Oi—1 inch to 0; needles, twigs, and cones.
A—0 to 5 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine, and medium roots; common fine tubular pores; neutral (NaF pH 10.1); clear wavy boundary.
Bw1—5 to 13 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and common medium roots; common fine tubular pores; neutral (NaF pH 9.8); clear smooth boundary.
2Bw2—13 to 21 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and coarse roots; common fine irregular pores; 5 percent pebbles; slightly acid; clear wavy boundary.
2Bw3—21 to 34 inches; very pale brown (10YR 7/3) coarse sandy loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; common fine irregular pores; 5 percent pebbles; slightly acid; gradual wavy boundary.
2C—34 to 45 inches; very pale brown (10YR 7/4) loamy coarse sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few fine, medium, and coarse roots; few fine tubular pores; 10 percent pebbles; slightly acid; clear wavy boundary.
2Cr—45 to 55 inches; weathered granitic rock.

Depth to weathered bedrock is 40 to 60 inches. The mantle of volcanic ash is 7 to 14 inches thick.

The particle-size control section is 6 to 15 percent clay and 5 to 35 percent angular rock fragments. The profile is medium acid to neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The AB horizon, where present, has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is silt loam or loam with 0 to 10 percent pebbles.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry and 3 to 6 moist. It is silt loam, loam, or fine sandy loam with 0 to 20 percent pebbles.

The 2Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam, sandy loam, or coarse sandy loam with 5 to 30 percent pebbles and 0 to 5 percent cobbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is coarse sandy loam, loamy sand, or loamy coarse sand with 10 to 30 percent pebbles and 0 to 5 percent cobbles.

Capoose Series

The Capoose series consists of moderately deep, well drained soils on shoulders and backslopes of mountains (fig. 19). These soils formed in volcanic ash over colluvium and glacial till derived from granitic rock. Slopes are 20 to 65 percent. Elevation is 3,000 to 4,800 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Capoose silt loam, 40 to 65 percent slopes, about 4 miles east of Keller; 350 feet north and 900 feet west of the southeast corner of sec. 24, T. 30 N., R. 33 E., W.M.:

Oi—5 inches to 0; needles, bark, twigs, wood, and cones.

A—0 to 2 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common medium roots; common fine tubular pores; 10 percent fine pebbles; medium acid; abrupt smooth boundary.

Bw1—2 to 7 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 3/4) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine

Figure 19.—Typical pedon of a Capoose soil that has granitic bedrock at a depth of about 26 inches. (Numbers on tape represent feet.)

irregular pores; few medium and coarse roots; 10 percent fine pebbles; neutral; clear smooth boundary.

Bw2—7 to 17 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; common fine irregular pores; 10 percent fine pebbles; slightly acid; clear smooth boundary.

2Bw3—17 to 25 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few very fine and fine roots and common medium roots; common fine irregular pores; 40 percent angular pebbles and 15 percent cobbles; medium acid; clear smooth boundary.

2C—25 to 35 inches; very pale brown (10YR 7/4) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few very fine and fine roots and common medium roots; few fine tubular pores; 65 percent angular pebbles and 15 percent cobbles; medium acid; gradual smooth boundary.

R—35 to 39 inches; granitic bedrock.

Depth to bedrock is 20 to 40 inches. The mantle of volcanic ash is 14 to 25 inches thick. The profile is medium acid to neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. In some places this horizon consists largely of Mt. St. Helens “T” ash with 0 to 15 percent pebbles. This horizon is absent in some pedons.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 to 6 dry or moist. It is silt loam or loam with 5 to 10 percent pebbles and 0 to 5 percent cobbles.

The 2Bw horizon has value of 4 or 5 moist and chroma of 3 or 4 dry or moist. It is 40 to 50 percent pebbles, 15 to 30 percent cobbles, and 0 to 5 percent stones. This horizon is absent in some pedons.

The 2C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is 40 to 70 percent pebbles, 10 to 30 percent cobbles, and 0 to 5 percent stones.

Cashmere Series

The Cashmere series consist of very deep, well drained soils on terraces and terrace escarpments. These soils formed in glaciofluvial material with a component of loess. Slopes are 0 to 50 percent. Elevation is 800 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Cashmere fine sandy loam, 5 to 10 percent slopes, about 4 miles south of Nespelem; 600 feet north and 1,700 feet east of the southwest corner of sec. 12, T. 30 N., R. 30 E., W.M.:

A—0 to 10 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common fine tubular pores; neutral; clear wavy boundary.

Bw1—10 to 22 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

Bw2—22 to 36 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; common fine irregular pores; 5 percent pebbles; neutral; gradual wavy boundary.

C1—36 to 46 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; common fine irregular pores; 10 percent pebbles; mildly alkaline; abrupt wavy boundary.

C2—46 to 60 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; 5 percent pebbles; mildly alkaline.

The particle-size control section is 0 to 10 percent rock fragments. The solum is 24 to 38 inches thick. The mollic epipedon is 9 to 14 inches thick.

The A horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. The horizon is 0 to 5 percent pebbles. It is neutral or slightly acid.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is fine sandy loam, sandy loam, or very fine sandy loam with 0 to 10 percent pebbles and 0 to 5 percent cobbles. It is neutral or mildly alkaline.

The C horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is fine sandy loam, sandy loam, or coarse sandy loam with 0 to 10 percent pebbles and 0 to 5

percent cobbles. It is mildly alkaline or moderately alkaline.

Cashmont Series

The Cashmont series consists of very deep, well drained soils on alluvial fans. These soils formed in alluvium with an admixture of loess. Slopes are 3 to 30 percent. Elevation is 850 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Cashmont gravelly sandy loam, fan, 15 to 30 percent slopes, about 6 miles south of Nespelem; 1,000 feet north and 1,600 feet west of the southeast corner of sec. 24, T. 30 N., R. 30 E., W.M.:

A1—0 to 6 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; few fine tubular pores; 25 percent pebbles; slightly acid; abrupt wavy boundary.

A2—6 to 14 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark gray (10YR 3/1) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; few fine tubular pores; 20 percent pebbles; slightly acid; clear wavy boundary.

AB—14 to 19 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; few fine tubular pores; 25 percent pebbles; neutral; clear wavy boundary.

Bw1—19 to 30 inches; brown (10YR 5/3) gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few fine tubular pores; 25 percent pebbles; neutral; gradual wavy boundary.

Bw2—30 to 38 inches; yellowish brown (10YR 5/4) gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 20 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

C—38 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 30 percent pebbles and 15 percent cobbles; neutral.

The solum is 20 to 38 inches thick. The mollic epipedon is 9 to 19 inches thick. The particle-size control section is 5 to 12 percent clay and 15 to 35 percent rock fragments.

The A and AB horizons have value of 4 or 5 dry and chroma of 2 or 3 dry and 1 to 3 moist. They are 15 to 30 percent pebbles and 0 to 5 percent cobbles. The horizons are slightly acid to mildly alkaline.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is fine sandy loam, sandy loam, or coarse sandy loam with 15 to 30 percent pebbles and 0 to 5 percent cobbles. The horizon is neutral or mildly alkaline.

The C horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 3 to 5 dry or moist. It is sandy loam, loamy sand, or sand with 20 to 50 percent pebbles and 0 to 5 percent cobbles. The horizon is neutral or mildly alkaline.

Cedonia Series

The Cedonia series consists of very deep, well drained soils on terraces and terrace escarpments. These soils formed in glacial lake sediment with a component of loess and volcanic ash. Slopes are 0 to 65 percent. Elevation is 1,300 to 2,700 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Cedonia silt loam, 5 to 15 percent slopes, about 9 miles south of Inchelium; 550 feet north and 300 feet east of the southwest corner of sec. 24, T. 31 N., R. 36 E., W.M.:

Oi—1 inch to 0; needles and twigs.

A—0 to 2 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; neutral; clear smooth boundary.

Bw1—2 to 10 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; neutral; clear wavy boundary.

Bw2—10 to 24 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium subangular blocky

structure; hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; neutral; clear wavy boundary.

BC—24 to 40 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; neutral; clear wavy boundary.

C—40 to 60 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; laminated; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; slightly effervescent; moderately alkaline.

The particle-size control section is 18 to 35 percent clay and less than 15 percent fine or coarse sand.

The A horizon has hue of 10YR or 2.5Y and value of 5 or 6 dry and 3 or 4 moist. It is neutral or slightly acid.

The Bw1 horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 or 3 dry or moist. It is silt loam or silty clay loam. It is neutral to moderately alkaline.

The Bw2 horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 or 3 dry or moist. It is silt loam or silty clay loam. It is neutral to moderately alkaline.

The BC horizon, where present, has hue of 10YR or 2.5Y and value of 6 or 7 dry and 5 or 6 moist. It is silt loam or silty clay loam. It is moderately alkaline or strongly alkaline.

The C horizon has hue of 10YR, 2.5Y, or 5Y, value of 6 or 7 dry, and chroma of 2 or 3 dry or moist. It is silt loam or silty clay loam. It is moderately alkaline or strongly alkaline.

Centralpeak Series

The Centralpeak series consists of moderately deep, well drained soils on ridges, shoulders, backslopes, and footslopes of hills and mountains (fig. 20). These soils formed in colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess. Slopes are 5 to 65 percent. Elevation is 2,200 to 4,500 feet. The average annual precipitation is 16 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Centralpeak loam, warm, 5 to 20 percent slopes, about 6 miles northwest of Keller; 1,500 feet south and 1,700 feet west of the northeast corner of sec. 35, T. 31 N., R. 32 E., W.M.:

Oi—2 inches to 0; needles, twigs, and cones.

A—0 to 4 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, medium, and coarse roots; common fine tubular pores; 5 percent fine pebbles; neutral (NaF pH 10.5); abrupt wavy boundary.

Bw1—4 to 12 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, medium, and coarse roots; common fine tubular pores; 5 percent fine pebbles; neutral (NaF pH 10.0); abrupt wavy boundary.

2Bw2—12 to 20 inches; light yellowish brown (2.5Y 6/4) coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; 5 percent fine pebbles; slightly acid; clear wavy boundary.

2C—20 to 29 inches; light olive brown (2.5Y 5/4) gravelly loamy coarse sand, olive brown (2.5Y 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common fine irregular pores; 15 percent pebbles; slightly acid; abrupt smooth boundary.

2Cr—29 to 39 inches; weathered granitic bedrock.

Depth to weathered bedrock is 20 to 40 inches. The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 5 to 25 percent rock fragments. The profile is medium acid to neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles. This horizon is absent in some pedons.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry and 3 to 6 moist. It is silt loam, loam, or fine sandy loam with 0 to 25 percent pebbles and 0 to 5 percent cobbles.

The 2Bw horizon has hue of 2.5Y or 10YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 4 or 5 dry or moist. It is loam or coarse sandy loam with 5 to 25 percent pebbles and 0 to 5 percent cobbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is sandy loam, coarse sandy loam, or loamy coarse sand with 5 to 30 percent pebbles and 0 to 5 percent cobbles.

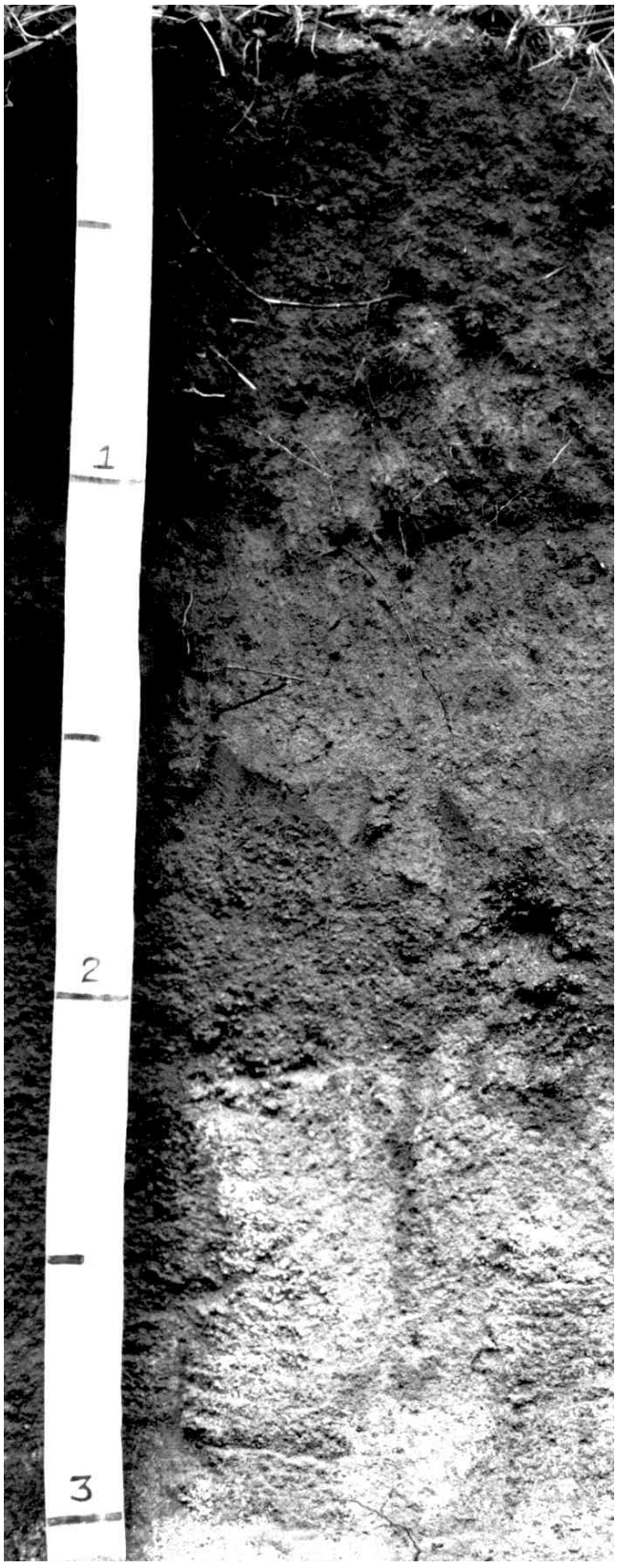


Figure 20.—Typical pedon of a Centralpeak soil that has weathered granitic bedrock at a depth of about 26 inches. (Numbers on tape represent feet.)

Chumstick Series

The Chumstick series consists of soils that are shallow and well drained. These soils are on ridges, shoulders, and backslopes of mountains. They formed in colluvium and residuum derived from granitic rock with a component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 3,500 to 5,800 feet. The average annual precipitation is 20 to 28 inches, the average annual air temperature is 41 to 44 degrees F, and the frost-free period is 85 to 120 days.

Typical pedon of Chumstick extremely bouldery loam in an area of Rock outcrop-Chumstick, cold complex, 20 to 65 percent slopes, about 6 miles northeast of Disautel; 2,400 feet east and 2,400 feet south of the northwest corner of sec. 16, T. 34 N., R. 28 E., W.M.:

Oi—1 inch to 0; leaves and dead grasses.
A—0 to 5 inches; grayish brown (10YR 5/2) extremely bouldery loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine, and medium roots; few fine tubular pores; 30 percent pebbles, 10 percent cobbles, and 20 percent stones and boulders; medium acid; clear wavy boundary.
Bw—5 to 12 inches; brown (10YR 5/3) very cobbly sandy loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; 20 percent pebbles and 25 percent cobbles; medium acid; abrupt wavy boundary.
R—12 to 16 inches; granitic bedrock.

Depth to bedrock is 10 to 20 inches. The particle-size control section is 35 to 70 percent rock fragments. The profile is medium acid or slightly acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 or 2 moist. It is very stony loam or extremely bouldery loam with 15 to 40 percent pebbles, 5 to 25 percent cobbles, and 5 to 25 percent stones and boulders.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is 20 to 70 percent pebbles, 10 to 25 percent cobbles, and 0 to 5 percent stones.

Codylake Series

The Codylake series consists of deep, well drained soils on backslopes, shoulders, footslopes, and ridges of mountains. These soils formed in volcanic ash over colluvium and residuum derived from granitic rock. Slopes are 5 to 65 percent. Elevation is 3,800 to 6,000

feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 38 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Codylake loam, 5 to 20 percent slopes, about 10 miles east of Disautel; 1,650 feet west and 950 feet south of the northeast corner of sec. 15, T. 33 N., R. 30 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.
A—0 to 5 inches; yellowish brown (10YR 5/4) loam, dark brown (10YR 4/3) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic, many very fine, fine, and medium roots; common fine irregular pores; 10 percent pebbles; neutral; clear smooth boundary.
Bw1—5 to 13 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; 10 percent pebbles; medium acid; clear smooth boundary.
Bw2—13 to 24 inches; light yellowish brown (10YR 6/4) gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic, common very fine and fine roots and few medium roots; common fine irregular pores; 20 percent fine pebbles; medium acid; clear smooth boundary.
2C—24 to 43 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/6) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 25 percent fine pebbles; medium acid; gradual smooth boundary.
2Cr—43 to 53 inches; weathered granitic bedrock.

The mantle of volcanic ash is 14 to 24 inches thick. Depth to weathered bedrock is 40 to 60 inches. The profile is medium acid to neutral.

The A horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is loam, fine sandy loam, or sandy loam with 0 to 20 percent pebbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 4 to 6 moist and 6 to 8 dry, and chroma of 3 to 6 dry or moist. It is sandy loam or coarse sandy loam with 10 to 30 percent pebbles and 0 to 5 percent cobbles.

Colockum Series

The Colockum series consists of very deep, well drained soils on moraines and in depressions on till plains. These soils formed in old glacial till with a mantle of loess. Slopes are 3 to 65 percent. Elevation is 1,900 to 2,800 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Colockum stony loam, 3 to 25 percent slopes, about 13 miles southeast of Okanogan; 250 feet east and 925 feet south of the northwest corner of sec. 2, T. 31 N., R. 27 E., W.M.:

A—0 to 11 inches; brown (10YR 4/3) stony loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; few very fine irregular and tubular pores; 5 percent pebbles, 5 percent cobbles, and 5 percent stones; mildly alkaline; abrupt wavy boundary.
Bt1—11 to 22 inches; yellowish brown (10YR 5/6) silty clay loam, dark yellowish brown (10YR 4/6) moist; strong fine and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine roots and few fine and medium roots; common very fine and fine irregular pores; common distinct clay films on faces of peds and lining pores; 5 percent pebbles; neutral; clear smooth boundary.
2Bt2—22 to 36 inches; olive yellow (2.5Y 6/6) loam, light olive brown (2.5Y 5/6) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and few fine roots; common very fine and fine irregular pores; common faint clay films on faces of peds and lining pores; 10 percent pebbles; neutral; abrupt wavy boundary.
2Btk—36 to 46 inches; brownish yellow (10YR 6/6) silty clay loam, dark yellowish brown (10YR 4/6) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; common fine irregular pores; common distinct clay films on faces of peds and lining pores; common medium irregularly shaped soft calcium carbonate accumulations in filaments and masses; violently effervescent; 10 percent pebbles; moderately alkaline; clear wavy boundary.
2Bk—46 to 60 inches; yellow (10YR 7/6) gravelly loam, yellowish brown (10YR 5/6) moist; massive; slightly hard, friable, slightly sticky and slightly

plastic; few fine roots; common fine irregular pores; few fine irregularly shaped soft calcium carbonate accumulations in filaments; strongly effervescent; 15 percent pebbles and 5 percent cobbles; moderately alkaline.

The mollic epipedon is 10 to 15 inches thick. Depth to secondary carbonates is 24 to 38 inches. The particle-size control section is 5 to 20 percent rock fragments and 25 to 32 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is loam, stony loam, or bouldery loam with 0 to 25 percent pebbles, 0 to 10 percent cobbles, and 0 to 10 percent stones. It is neutral or mildly alkaline.

An E horizon is present in some pedons.

The Bt1 horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 to 6 dry or moist. It is loam, clay loam, silt loam, or silty clay loam with 0 to 10 percent pebbles and 0 to 15 percent cobbles.

The 2Bt2 horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 to 5 moist, and chroma of 4 to 6 dry or moist. It is loam or clay loam with 5 to 20 percent pebbles and 5 to 15 percent cobbles. It is neutral or mildly alkaline.

The 2Btk horizon has chroma of 4 to 6 dry or moist. It is loam, silt loam, or silty clay loam with 5 to 20 percent pebbles and 0 to 5 percent cobbles. It is mildly alkaline or moderately alkaline.

The 2Bk horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 4 to 6 dry or moist. It is silty clay loam or loam with 15 to 35 percent pebbles and 5 to 15 percent cobbles. It is mildly alkaline or moderately alkaline. This horizon is absent in some pedons.

Conconully Series

The Conconully series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on undulating ground moraines on foothills, plateaus, and glacially scoured ridges, shoulders, and backslopes of hills. The soils formed in glacial till with a component of loess and volcanic ash. Slopes are 3 to 65 percent. Elevation is 1,400 to 2,900 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Conconully stony fine sandy loam, 25 to 65 percent north slopes, about 2 miles east of Elmer City; 2,100 feet south and 1,050 feet east of the northwest corner of sec. 22, T. 29 N., R. 31 E., W.M.:

A1—0 to 2 inches; grayish brown (10YR 5/2) stony fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate very fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine, common fine, and few medium roots; common fine irregular pores; 5 percent stones and 10 percent pebbles; neutral; clear smooth boundary.

A2—2 to 12 inches; grayish brown (10YR 5/2) stony fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and fine roots; common fine irregular pores; 1 percent stones and 15 percent pebbles; neutral; clear smooth boundary.

Bw—12 to 21 inches; light yellowish brown (10YR 6/4) gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine irregular pores; 25 percent pebbles and 3 percent cobbles; neutral; clear wavy boundary.

2Cd—21 to 60 inches; light brownish gray (2.5Y 6/2) dense glacial till that crushes to gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; 30 percent pebbles and 5 percent cobbles; neutral.

Depth to dense glacial till is 20 to 40 inches. The mollic epipedon is 9 to 20 inches thick. The particle-size control section is 3 to 10 percent clay and 15 to 35 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is fine sandy loam, stony or very stony fine sandy loam, or bouldery fine sandy loam with 0 to 15 percent stones, 0 to 5 percent cobbles, and 5 to 15 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is fine sandy loam or sandy loam with 5 to 35 percent pebbles and 0 to 10 percent cobbles.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is sandy loam, coarse sandy loam, or fine sandy loam with 15 to 35 percent pebbles and 0 to 10 percent cobbles. It is neutral or mildly alkaline.

Couleedam Series

The Couleedam series consists of shallow, well drained soils on shoulders and backslopes of foothills. These soils formed in colluvium derived from granitic

rock and gneiss with a component of loess. Slopes are 30 to 70 percent. Elevation is 1,000 to 2,200 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Couleedam very stony sandy loam in an area of Couleedam-Rock outcrop complex, 30 to 70 percent slopes, about 1 mile southeast of Coulee Dam; 2,000 feet north and 350 feet east of the southwest corner of sec. 5, T. 28 N., R. 31 E., W.M.:

A1—0 to 3 inches; brown (10YR 4/3) very stony sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common fine irregular pores; 10 percent pebbles, 15 percent cobbles, and 10 percent stones and boulders; neutral; clear wavy boundary.

A2—3 to 8 inches; brown (10YR 5/3) very cobbly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common fine irregular pores; 20 percent pebbles and 20 percent cobbles; neutral; clear wavy boundary.

Bw—8 to 15 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; common fine irregular pores; 30 percent pebbles and 10 percent cobbles; neutral; abrupt irregular boundary.

R—15 to 19 inches; granitic bedrock.

Depth to bedrock is 10 to 20 inches. The mollic epipedon is 7 to 11 inches thick. The particle-size control section is 5 to 15 percent clay and 35 to 60 percent rock fragments. The profile is neutral or mildly alkaline.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 10 to 30 percent pebbles, 5 to 25 percent cobbles, and 0 to 15 percent stones and boulders.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 25 to 45 percent pebbles, 5 to 20 percent cobbles, and 0 to 5 percent stones and boulders.

Coxlake Series

The Coxlake series consists of very deep, somewhat poorly drained soils on low stream terraces and flood plains. These soils formed in alluvium of mixed mineralogy. Slopes are 0 to 3 percent. Elevation is 1,700 to 2,600 feet. The average annual precipitation is 12 to 16 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 140 days.

Typical pedon of Coxlake silt loam, 0 to 3 percent slopes, about 5 miles northwest of Nespelem; 1,700 feet south and 700 feet west of the northeast corner of sec. 2, T. 31 N., R. 30 E., W.M.:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; common very fine tubular pores; neutral; clear wavy boundary.

A—6 to 29 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; few fine faint brown (7.5YR 5/4) mottles, dark brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; 5 percent fine pebbles; neutral; clear wavy boundary.

AC—29 to 38 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; common medium distinct light brown (7.5YR 6/4) mottles, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 10 percent fine pebbles; neutral; clear wavy boundary.

C1—38 to 48 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; common medium distinct light brown (7.5YR 6/4) mottles, brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 10 percent pebbles; neutral; clear wavy boundary.

C2—48 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; many medium distinct reddish yellow (7.5YR 6/6) mottles, strong brown (7.5YR 4/6) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 30 percent pebbles and 10 percent cobbles; neutral.

The mollic epipedon is 20 to 40 inches thick. The particle-size control section is 5 to 15 percent clay and 0 to 15 percent rock fragments. An apparent water table is present in November through August.

Occasional periods of flooding occur in February through May.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam, loam, or very fine sandy loam with 0 to 15 percent pebbles.

The AC and C1 horizons have value of 5 or 6 dry and 3 or 4 moist, and they have chroma of 2 or 3 dry or moist. They are silt loam, loam, or sandy loam with 0 to 20 percent pebbles.

The C2 horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 or 3 dry or moist. It is stratified fine sandy loam to sand with 0 to 5 percent stones, 0 to 10 percent cobbles, and 5 to 40 percent pebbles.

Cryofluvents

Cryofluvents consist of very deep, moderately well drained and somewhat poorly drained soils on narrow flood plains and low terraces along mountain streams. These soils formed in alluvium derived from mixed sources with a component of volcanic ash. Slopes are 0 to 8 percent. Elevation is 2,800 to 4,800 feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 40 to 42 degrees F, and the frost-free period is 80 to 100 days.

Reference pedon of Cryofluvents, 0 to 8 percent slopes, about 16 miles north of Nespelem; 1,500 feet west and 500 feet south of the northeast corner of sec. 5, T. 33 N., R. 31 E., W. M.:

Oi—3 to 2 inches; needles, twigs, and mosses.
Oe—2 inches to 0; partially decomposed wood, needles, and twigs.
A—0 to 5 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; common fine irregular pores; 2 percent pebbles; medium acid; clear smooth boundary.
AC—5 to 12 inches; brown (10YR 5/3) sandy loam with few thin strata of silt loam 5 to 10 millimeters thick, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common fine irregular pores; 5 percent pebbles; medium acid; clear smooth boundary.
2C1—12 to 21 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; few fine tubular pores; 30 percent pebbles; slightly acid; abrupt smooth boundary.
2C2—21 to 30 inches; multicolored very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 50 percent pebbles and 5 percent cobbles; neutral; gradual smooth boundary.
2C3—30 to 60 inches; multicolored extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine roots; 65 percent pebbles and 5 percent cobbles; neutral.

The particle-size control section is 10 to 60 percent rock fragments and 3 to 10 percent clay by weighted average. Depth to sandy or sandy-skeletal material is 15 to 60 inches or more. Some pedons have one or more layers of volcanic ash 7 to 20 inches thick in the upper 30 inches. An apparent water table is present in March through June. Occasional periods of flooding occur in March through June.

The A horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 15 percent pebbles. It is medium acid or slightly acid.

The AC horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is stratified silt loam to sandy loam with 0 to 15 percent pebbles. It is medium acid or slightly acid. This horizon is absent in some pedons.

The upper part of the 2C horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 1 to 4 moist or dry. The lower part is multicolored. The horizon is stratified very fine sandy loam to coarse sand with 5 to 75 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones. It is medium acid to neutral.

Cubcreek Series

The Cubcreek series consists of very deep, moderately well drained soils on stream terraces and flood plains. These soils formed in recent alluvium. Slopes are 0 to 3 percent. Elevation is 1,500 to 2,100 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Cubcreek fine sandy loam, 0 to 3 percent slopes, about 9 miles north of Keller; 1,500 feet south and 1,000 feet east of the northwest corner of sec. 7, T. 31 N., R. 33 E., W.M.:

Oi—3 to 2 inches; needles, leaves, twigs, and cones.
Oe— 2 inches to 0; partially decomposed needles, leaves, and twigs.
A1—0 to 3 inches; dark gray (10YR 4/1) fine sandy

loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; common fine irregular pores; 10 percent fine pebbles; neutral; abrupt smooth boundary.

A2—3 to 10 inches; dark gray (10YR 4/1) fine sandy loam, very dark gray (10YR 3/1) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; 10 percent fine pebbles; neutral; abrupt wavy boundary.

AC—10 to 15 inches; grayish brown (2.5Y 5/2) gravelly loamy sand, very dark grayish brown (2.5Y 3/2) moist; massive with weak fine subangular blocky structure in places; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; few fine tubular pores; 20 percent pebbles; neutral; clear wavy boundary.

Ab—15 to 19 inches; gray (10YR 5/1) sandy loam, very dark gray (10YR 3/1) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; few fine tubular pores; 5 percent cobbles and 5 percent pebbles; neutral; abrupt wavy boundary.

ACb—19 to 25 inches; light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; few fine tubular pores; 10 percent pebbles; neutral; clear smooth boundary.

C1—25 to 44 inches; light gray (10YR 7/2) gravelly fine sandy loam with thin strata of loam and loamy fine sand, grayish brown (10YR 5/2) moist; few medium faint brown (10YR 5/3) mottles; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 20 percent pebbles; mildly alkaline; clear smooth boundary.

C2—44 to 60 inches; light brownish gray (2.5Y 6/2) gravelly fine sandy loam and loamy fine sand with thin strata of loam, dark grayish brown (2.5Y 4/2) moist; common medium distinct very pale brown (10YR 7/4) mottles; massive; hard, friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 20 percent pebbles; mildly alkaline.

The particle-size control section is 5 to 25 percent rock fragments. An apparent water table is present in January through June. Occasional periods of flooding occur in February through May.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is 0 to 10 percent pebbles. It is slightly acid or neutral.

The AC and Ab horizons are stratified fine sandy loam to loamy sand with 0 to 5 percent stones and cobbles and 0 to 20 percent pebbles. The Ab horizon is absent in some pedons.

The ACb and C horizons have hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. They are stratified loamy fine sand to loam with 5 to 20 percent pebbles. They are neutral or mildly alkaline. The ACb horizon is absent in some pedons.

Cumulic Haploxerolls

Cumulic Haploxerolls consist of very deep, moderately well drained soils on alluvial fans. These soils formed in alluvium of mixed mineralogy. Slopes are 3 to 10 percent. Elevation is 1,700 to 2,800 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees, and the frost-free period is 110 to 150 days.

Reference pedon of Cumulic Haploxerolls, 3 to 10 percent slopes, about 6 miles northeast of Elmer City; 1,300 feet south and 400 feet east of the northwest corner of sec. 27, T. 30 N., R. 31 E., W.M.:

A1—0 to 11 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine roots; common fine tubular pores; 15 percent pebbles; neutral; gradual wavy boundary.

A2—11 to 30 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine roots and common fine roots; common fine tubular pores; 15 percent pebbles; neutral; clear wavy boundary.

AC—30 to 48 inches; dark brown (10YR 4/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and few fine roots; common fine irregular pores; 20 percent pebbles; neutral; gradual wavy boundary.

C—48 to 60 inches; dark brown (10YR 4/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, friable, slightly sticky and nonplastic; common very fine and few fine roots; common fine irregular pores; 20 percent pebbles; neutral.

The mollic epipedon is 24 to 40 inches thick. The particle-size control section is 5 to 18 percent clay and 15 to 50 percent rock fragments. It is neutral or mildly alkaline. An apparent water table is present in February through May.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 30 percent pebbles.

The AC horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is loam or sandy loam with 5 to 50 percent pebbles and 0 to 5 percent cobbles. This horizon is absent in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 7 dry and 3 to 5 moist, and chroma of 2 or 3 dry or moist. It is loam or sand with 5 to 60 percent pebbles and 0 to 10 percent cobbles.

Dart Series

The Dart series consists of very deep, somewhat excessively drained soils on terraces, terrace escarpments, and backslopes of hills. These soils formed in sandy glacial outwash. Slopes are 0 to 65 percent. Elevation is 1,400 to 2,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Dart loamy sand, warm, 0 to 15 percent slopes, about 5 miles northeast of Nespelem; 1,000 feet south and 2,100 feet east of the northwest corner of sec. 3, T. 31 N., R. 31 E., W.M.:

A—0 to 3 inches; grayish brown (10YR 5/2) loamy sand, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; 5 percent pebbles; neutral; clear wavy boundary.

Bw—3 to 14 inches; pale brown (10YR 6/3) loamy sand, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; common fine tubular pores; 5 percent pebbles; neutral; clear wavy boundary.

C1—14 to 32 inches; pale brown (10YR 6/3) loamy sand, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

C2—32 to 60 inches; pale brown (10YR 6/3) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 5 percent pebbles; neutral.

The particle-size control section is 0 to 15 percent pebbles, and the fine-earth fraction averages 15 to 50 percent coarse and very coarse sand. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loamy sand or loamy coarse sand with 0 to 10 percent pebbles.

The Bw and C1 horizons have value of 5 or 6 dry. They are loamy sand or loamy coarse sand with 0 to 15 percent pebbles.

The C2 horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is sand, loamy coarse sand, or coarse sand with 0 to 15 percent pebbles.

Dehart Series

The Dehart series consists of very deep, well drained soils on toeslopes, backslopes, and shoulders of hills. These soils formed in glacial till and colluvium derived from metamorphic rock with a component of loess and volcanic ash. Slopes are 8 to 65 percent. Elevation is 1,300 to 3,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost free period is 100 to 130 days.

Typical pedon of Dehart gravelly loam in an area of Dehart-Rock outcrop complex, 30 to 65 percent slopes, about 5 miles south of Inchelium; 2,640 feet south and 300 feet west of the northeast corner of sec. 1, T. 31 N., R. 36 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.

A1—0 to 3 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; common fine irregular pores; 20 percent pebbles; neutral; clear wavy boundary.

A2—3 to 8 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; common fine irregular pores; 20 percent pebbles; neutral; clear wavy boundary.

Bw1—8 to 16 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine, fine, and medium roots; common fine irregular pores; 40 percent pebbles; neutral; clear wavy boundary.

Bw2—16 to 30 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine, fine, and medium roots; common fine irregular pores; 45 percent pebbles; neutral; clear wavy boundary.
C—30 to 60 inches; very pale brown (10YR 7/3) very gravelly loam, brown (10YR 5/3) moist; massive; slightly hard, firm, slightly sticky and slightly plastic; few very fine, fine, and medium roots; few fine tubular pores; 45 percent pebbles; slightly acid.

The particle-size control section is 35 to 60 percent rock fragments.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 15 to 20 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist. It is loam or sandy loam with 30 to 50 percent pebbles and 5 to 15 percent cobbles. It is slightly acid or neutral.

The C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 3 or 4 moist. It is loam or sandy loam with 35 to 50 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones. It is slightly acid or neutral.

Dinkelman Series

The Dinkelman series consists of deep, well drained soils on backslopes, footslopes, and shoulders of hills and mountains. These soils formed in residuum and colluvium derived from granitic rock with a component of loess and volcanic ash in the upper part. Slopes are 5 to 65 percent. Elevation is 2,000 to 3,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Dinkelman gravelly loam, 40 to 65 percent slopes, about 3 miles east of Elmer City; 1,400 feet east and 1,200 feet south of the northwest corner of sec. 23, T. 29 N., R. 31 E., W M.:

Oi—2 inches to 1 inch; needles, cones, and twigs.
Oe—1 inch to 0; partially decomposed needles.
A—0 to 10 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and medium roots; common fine irregular pores; 20 percent pebbles; neutral; clear smooth boundary.
BA—10 to 17 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine and medium roots; common fine irregular pores; 20 percent pebbles; slightly acid; clear wavy boundary.
Bw1—17 to 29 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, brown (10YR 4/3) dry; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few fine and medium roots; common fine irregular pores; 25 percent pebbles; slightly acid; gradual wavy boundary.
Bw2—29 to 43 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few fine and medium roots; common fine irregular pores; 30 percent pebbles; slightly acid; clear wavy boundary.
Cr—43 to 53 inches; weathered granitic bedrock.

Depth to weathered bedrock is 40 to 60 inches. The mollic epipedon is 10 to 20 inches thick. The particle-size control section is 15 to 30 percent rock fragments. It is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 or 2 moist. It is loam or gravelly loam with 5 to 25 percent pebbles and 0 to 15 percent cobbles.

The BA horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is coarse sandy loam, sandy loam, or loam with 10 to 25 percent pebbles and 0 to 15 percent cobbles. This horizon is absent in some pedons.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 15 to 45 percent pebbles and 0 to 15 percent cobbles.

Disautel Series

The Disautel series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on ground moraines on foothills. They formed in glacial till with a mantle of loess. Slopes are 0 to 30 percent. Elevation is 1,600 to 2,400 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Disautel very fine sandy loam in an area of Disautel-Rock outcrop complex, 3 to 30

percent slopes, about 5 miles southeast of Okanogan; 1,100 feet east and 400 feet north of the southwest corner of sec. 3, T. 33 N., R. 27 E., W.M.:

A1—0 to 7 inches; dark grayish brown (10YR 4/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many fine roots; many fine and medium tubular pores; 5 percent pebbles; neutral; gradual wavy boundary.

A2—7 to 15 inches; brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; many fine and medium tubular pores; 5 percent pebbles; mildly alkaline; clear wavy boundary.

Bw—15 to 32 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few fine roots; common fine tubular pores; 5 percent pebbles; mildly alkaline; clear wavy boundary.

2Bkd1—32 to 42 inches; light gray (10YR 7/1) dense glacial till that crushes to very gravelly fine sandy loam, light brownish gray (10YR 6/2) moist; massive; hard, friable, nonsticky and nonplastic; common medium tubular pores; 35 percent pebbles, 5 percent cobbles, and 5 percent stones; violently effervescent; few filaments of soft powdery lime; moderately alkaline; gradual wavy boundary.

2Bkd2—42 to 60 inches; light gray (10YR 7/1) dense glacial till that crushes to very gravelly fine sandy loam, light brownish gray (10YR 6/2) moist; massive; hard, friable, nonsticky and nonplastic; common medium tubular pores; 20 percent pebbles, 5 percent cobbles, 5 percent stones, and 5 percent boulders; violently effervescent; common filaments of soft powdery lime; strongly alkaline.

Depth to dense glacial till is 20 to 40 inches. The mollic epipedon is 10 to 16 inches thick. Depth to secondary carbonates is 30 to 40 inches. The particle-size control section is 10 to 20 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles. It is neutral or mildly alkaline.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is loam, very fine sandy loam, or silt loam with 5 to 10 percent pebbles and 0 to 5 percent cobbles. It is neutral or mildly alkaline.

The 2Bkd horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 1 to 4 dry or moist. It is loam or fine sandy loam with 10 to 35 percent pebbles, 5 to 20 percent cobbles, 0 to 5 percent stones, and 0 to 5 percent boulders. It is mildly alkaline to strongly alkaline.

Donavan Series

The Donavan series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on till plains and summits, toeslopes, footslopes, and backslopes of hills and mountains. They formed in glacial till with a component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 1,500 to 4,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Donavan loam, dry, 5 to 15 percent slopes, about 4 miles northeast of Nespelem; 2,000 feet north and 1,500 east of the southwest corner of sec. 32, T. 32 N., R. 31 E., W.M.:

Oi—2 inches to 1 inch; needles, twigs, leaves, and cones.

Oe—1 inch to 0; partially decomposed organic material.

A—0 to 5 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; 2 percent pebbles; medium acid; clear smooth boundary.

AB—5 to 11 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; 10 percent pebbles; slightly acid; gradual wavy boundary.

Bw—11 to 21 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; 15 percent pebbles and 5 percent cobbles; slightly acid; gradual wavy boundary.

2Cd1—21 to 41 inches; light gray (10YR 7/2) dense glacial till that crushes to gravelly sandy loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; very few very fine, fine, and medium roots; 20 percent pebbles

and 2 percent cobbles; slightly acid; gradual wavy boundary.

2Cd2—41 to 60 inches; light gray (10YR 7/2) dense glacial till that crushes to gravelly sandy loam, grayish brown (10YR 5/2) moist; massive; hard, friable, nonsticky and nonplastic; very few very fine, fine, and medium roots; 25 percent pebbles and 2 percent cobbles; neutral.

Depth to dense glacial till is 20 to 40 inches. The particle-size control section is 10 to 35 percent rock fragments with 5 to 15 percent clay. The mollic epipedon is 7 to 14 inches thick.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loam, sandy loam, bouldery loam, or bouldery sandy loam with 0 to 15 percent pebbles, 0 to 15 percent cobbles, and 0 to 5 percent stones and boulders. It is medium acid to neutral.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is loam or sandy loam with 5 to 25 percent pebbles and 0 to 15 percent cobbles. It is slightly acid or neutral.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is sandy loam or loam with 10 to 30 percent pebbles, 0 to 15 percent cobbles, and 0 to 5 percent stones.

Duleylake Series

The Duleylake series consists of very deep, moderately well drained soils in basins on glacial till plains. These soils formed in alluvium with a component of loess. Slopes are 0 to 8 percent. Elevation is 2,200 to 2,700 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Duleylake loam, 0 to 8 percent slopes, about 11 miles south of Okanogan; 1,320 feet east and 1,575 feet north of the southwest corner of sec. 1, T. 31 N., R. 26 E., W. M.:

A1—0 to 5 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots and few fine and medium roots; common very fine and fine irregular pores; neutral; clear smooth boundary.

A2—5 to 17 inches; brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine and fine irregular pores; neutral; clear wavy boundary.

BA1—17 to 23 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine and fine irregular and tubular pores; neutral; clear wavy boundary.

BA2—23 to 31 inches; pale brown (10YR 6/3) sandy loam, dark yellowish brown (10YR 4/3) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine irregular and tubular pores; mildly alkaline; clear wavy boundary.

Btk—31 to 37 inches; light brownish yellow (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; common very fine and fine irregular and tubular pores; common thin and moderately thick clay films on faces of peds and in pores; slightly effervescent; moderately alkaline; abrupt wavy boundary.

Bk—37 to 60 inches; very pale brown (10YR 7/4) silt loam, yellowish brown (10YR 5/4) moist; many medium prominent brownish yellow (10YR 6/8) mottles and common fine distinct light gray (10YR 7/1) mottles, yellowish brown (10YR 5/8) and gray (10YR 5/1) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine irregular pores; few soft powdery masses of lime; slightly effervescent; mildly alkaline.

The mollic epipedon is 15 to 20 inches thick. The particle-size control section is 25 to 30 percent clay and 0 to 10 percent pebbles. An apparent water table is present in January through June.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry.

The BA horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam. It is neutral or mildly alkaline.

The Btk horizon has value of 5 or 6 dry and 4 to 6 moist, and it has chroma of 4 to 6 dry or moist. It is loam or clay loam. It is mildly alkaline or moderately alkaline.

The Bk horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It has common fine distinct to many medium prominent mottles. It is silt loam, loam, or sandy loam. It is mildly alkaline or moderately alkaline.

Elbowlake Series

The Elbowlake series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on backslopes, footslopes, and toeslopes of hills and mountains. They formed in volcanic ash over glacial till derived dominantly from metasedimentary rock. Slopes are 5 to 65 percent. Elevation is 2,100 to 4,100 feet. The average annual precipitation is 18 to 24 inches, the average annual air temperature is 42 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Elbowlake silt loam, 40 to 65 percent slopes, about 12 miles northwest of Inchelium; 850 feet north and 2,125 feet east of the southwest corner of sec. 13, T. 34 N., R. 35 E., W.M.:

Oi—2 inches to 0; needles and twigs.

A—0 to 2 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common fine irregular pores; 5 percent pebbles; neutral (NaF pH 10.5); clear smooth boundary.

Bw1—2 to 15 inches; light yellowish brown (10YR 6/4) silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common fine irregular pores; 5 percent pebbles; neutral (NaF pH 10.5); abrupt wavy boundary.

2Bw2—15 to 20 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common fine irregular pores; 25 percent pebbles and 15 percent channers; neutral; clear wavy boundary.

2Cd1—20 to 43 inches; light brownish gray (2.5Y 6/2) dense glacial till that crushes to very channery sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, friable, nonsticky and slightly plastic; many very fine and fine roots; few fine tubular pores; 20 percent channers, 10 percent pebbles, and 10 percent cobbles; neutral; gradual wavy boundary.

2Cd2—43 to 60 inches; light brownish gray (2.5Y 6/2) dense glacial till that crushes to very gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, friable, nonsticky and slightly plastic; few very fine roots; 20 percent pebbles, 15 percent channers, and 5 percent cobbles; neutral.

Depth to dense glacial till is 20 to 40 inches. The mantle of volcanic ash is 14 to 20 inches thick. The upper part of the particle-size control section is 5 to 10 percent rock fragments, and the lower part is 12 to 18 percent clay, 30 to 50 percent silt, and 35 to 60 percent rock fragments, dominantly pebbles, channers, and cobbles. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles. This horizon is absent in some pedons.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 moist. It is 5 to 10 percent pebbles.

The 2Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or loam with 5 to 30 percent channers, 10 to 40 percent pebbles, and 5 to 10 percent cobbles and stones. This horizon is absent in some pedons.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 5 to 40 percent channers, 10 to 40 percent pebbles, and 5 to 10 percent cobbles and stones.

Ellisforde Series

The Ellisforde series consists of very deep, well drained soils on terraces and terrace escarpments. These soils formed in glacial lake sediment with a mantle of loess. Slopes are 0 to 25 percent. Elevation is 750 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Ellisforde silt loam, 0 to 5 percent slopes, about 8 miles north of Bridgeport; 2,000 feet east and 700 feet south of the northwest corner of sec. 10, T. 30 N., R. 25 E., W.M.:

A—0 to 12 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; many very fine, fine, and medium roots; few very fine interstitial and tubular pores; neutral; gradual wavy boundary.

Bw—12 to 18 inches; light brownish gray (10YR 6/2) silt loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; common very fine and fine roots; few fine and very fine interstitial and tubular pores; mildly alkaline; gradual wavy boundary.

2C1—18 to 30 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; massive;

slightly hard, friable, nonsticky and slightly plastic; common very fine and fine roots; few fine and very fine interstitial and tubular pores; mildly alkaline; gradual wavy boundary.

2Ck1—30 to 48 inches; very pale brown (10YR 7/3) silt loam, grayish brown (10YR 5/2) moist; massive; hard, firm, nonsticky and slightly plastic; few very fine roots; few fine interstitial and tubular pores; few very fine soft masses of lime; strongly effervescent; moderately alkaline; gradual wavy boundary.

2Ck2—48 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; few fine distinct reddish brown mottles; massive; slightly hard, firm, nonsticky and nonplastic; few very fine roots; few fine interstitial and tubular pores; few very fine soft masses of lime; violently effervescent; moderately alkaline.

Depth to secondary carbonates is 20 to 40 inches. The mollic epipedon is 9 to 14 inches thick.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is neutral or mildly alkaline.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 to 4 dry or moist. It is silt loam or very fine sandy loam. It is mildly alkaline or moderately alkaline.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 or 3 dry or moist. The horizon is silt loam or very fine sandy loam with thin strata of fine sandy loam, fine sand, or silty clay loam in some pedons. It is mildly alkaline or moderately alkaline.

The 2Ck horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 5 or 6 moist, and chroma of 2 or 3 dry or moist. The horizon is stratified very fine sandy loam to silt loam with thin strata of fine sand to silty clay loam. It is strongly effervescent or violently effervescent. It is moderately alkaline or strongly alkaline.

Elvedere Series

The Elvedere series consists of very deep, well drained soils on undulating terraces and terrace escarpments. These soils formed in glacial lake sediment. Slopes are 0 to 45 percent. Elevation is 1,100 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Elvedere silt loam in an area of Elvedere-Leahy silt loams complex, 0 to 15 percent slopes, about 5 miles northwest of Elmer City; 200 feet north and 1,800 feet west of the southeast corner of sec. 25, T. 30 N., R. 30 E., W.M.:

E—0 to 6 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; many very fine roots and common fine roots; common fine irregular pores; 5 percent rounded pebbles; neutral; abrupt wavy boundary.

Bt—6 to 10 inches; 60 percent pale brown (10YR 6/3) and 40 percent light gray (2.5Y 7/2) silty clay loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; common fine irregular pores; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk1—10 to 15 inches; very pale brown (10YR 7/3) silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; common fine irregular pores; common fine lime filaments and soft masses; violently effervescent; moderately alkaline; clear smooth boundary.

Bk2—15 to 27 inches; light gray (2.5Y 7/2) silty clay loam, light brownish gray (2.5Y 6/2) moist; massive (varved); hard, firm, sticky and plastic; common very fine and fine roots; common fine irregular pores; few fine soft masses of lime between varves; violently effervescent; strongly alkaline; gradual smooth boundary.

Bk3—27 to 52 inches; white (2.5Y 8/2) silty clay loam, light brownish gray (2.5Y 6/2) moist; massive (varved); slightly hard, friable, sticky and plastic; few very fine and fine roots; few fine tubular pores; few fine soft masses of lime between varves; violently effervescent; strongly alkaline; gradual smooth boundary.

Bk4—52 to 60 inches; light gray (2.5Y 7/2) silty clay loam, light brownish gray (2.5Y 6/2) moist; massive (varved); slightly hard, friable, sticky and plastic; few very fine roots; few fine tubular pores; few fine soft masses of lime between varves; strongly effervescent; strongly alkaline.

Depth to secondary carbonates is 7 to 16 inches. The particle-size control section is 0 to 5 percent pebbles, 35 to 45 percent clay, and less than 15 percent fine sand or coarser.

The E horizon has hue of 10YR or 2.5Y and value of 6 or 7 dry and 4 or 5 moist. It is neutral or mildly alkaline. It is silt loam or stony silt loam with 0 to 5

percent stones, 0 to 5 percent cobbles, and 0 to 10 percent pebbles.

The Bt horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is silty clay loam or silty clay. It is mildly alkaline or moderately alkaline.

The Bk horizon has hue of 10YR or 2.5Y, value of 7 or 8 dry and 5 or 6 moist, and chroma of 2 or 3 dry and 2 to 4 moist. It is silty clay loam or silty clay. It is moderately alkaline or strongly alkaline.

Emdent Series

The Emdent series consists of very deep, somewhat poorly drained and poorly drained soils in depressions on till plains and in backswamps of streams. These soils formed in alluvium derived from volcanic ash and loess. Slopes are 0 to 3 percent. Elevation is 1,200 to 2,600 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Emdent silt loam, 0 to 3 percent slopes, about 6 miles east of Nespelem; 1,400 feet north and 450 feet east of the southwest corner of sec. 19, T. 31 N., R. 32 E., W.M.:

Akzn1—0 to 6 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and fine roots; few fine tubular pores; strongly effervescent; very strongly alkaline; clear smooth boundary.

Akzn2—6 to 13 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common fine roots; few fine tubular pores; slightly effervescent; very strongly alkaline; abrupt smooth boundary.

Akzn3—13 to 18 inches; grayish brown (10YR 5/2) silt loam, dark brown (10YR 3/3) moist; common very dark gray (10YR 3/1) organic stains on surface of peds; weak fine subangular blocky structure; hard, friable, slightly sticky and nonplastic; few very fine roots; few fine tubular pores; violently effervescent; very strongly alkaline; clear smooth boundary.

Bkzn—18 to 26 inches; light brownish gray (2.5Y 6/2) silt loam, olive brown (2.5Y 4/4) moist; weak medium platy structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; violently effervescent; strongly alkaline; clear smooth boundary.

Bkg1—26 to 35 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, friable, slightly sticky and nonplastic; strongly effervescent; strongly alkaline; clear smooth boundary.

Bkg2—35 to 48 inches; light gray (2.5Y 7/2) silt loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; violently effervescent; strongly alkaline; clear smooth boundary.

Bkg3—48 to 60 inches; light gray (5Y 7/1) silt loam, olive (5Y 5/3) moist; massive; hard, firm, slightly sticky and slightly plastic; slightly effervescent; moderately alkaline.

An apparent water table is present throughout the year. The soils are ponded in February through May.

The Akzn horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is strongly effervescent or violently effervescent. It is strongly alkaline or very strongly alkaline. The sodium adsorption ratio is 15 to 30.

The Bkzn horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 1 to 3 dry or moist. The horizon is silt loam, very fine sandy loam, or loam. It is strongly effervescent or violently effervescent. It is mildly alkaline to strongly alkaline. The sodium adsorption ratio is 5 to 30.

The Bkg horizon has hue of 2.5Y, 5Y, or 10YR, value of 6 to 8 dry and 3 to 5 moist, and chroma 1 to 3 dry or moist. The horizon is silt loam, very fine sandy loam, or loam with 0 to 5 percent pebbles. It is slightly effervescent or strongly effervescent. The horizon is mildly alkaline to strongly alkaline. The sodium adsorption ratio is 5 to 30.

Ewall Series

The Ewall series consists of very deep, excessively drained soils on terraces with dunelike relief and on terrace escarpments. These soils formed in sandy glacial outwash and eolian sand. Slopes are 0 to 60 percent. Elevation is 1,300 to 3,000 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Ewall loamy fine sand, 10 to 25 percent slopes, about 3 miles south of Nespelem; 1,600 feet north and 700 feet west of the southeast corner of sec. 1, T. 30 N., R. 30 E., W.M.:

A—0 to 7 inches; brown (10YR 5/3) loamy fine sand, dark brown (10YR 3/3) moist; weak medium

subangular blocky structure; loose, nonsticky and nonplastic; common very fine and fine roots; few fine tubular pores; 5 percent pebbles; neutral; clear wavy boundary.

AC—7 to 13 inches; brown (10YR 5/3) loamy fine sand, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 5 percent pebbles; neutral; clear wavy boundary.

C1—13 to 38 inches; pale brown (10YR 6/3) sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few fine tubular pores; 10 percent pebbles; neutral; gradual wavy boundary.

C2—38 to 60 inches; pale brown (10YR 6/3) gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; 25 percent pebbles; neutral.

The particle-size control section is 0 to 5 percent clay and 0 to 25 percent rock fragments.

The A horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is loamy fine sand, coarse sand, or gravelly loamy sand with 0 to 35 percent pebbles.

The AC horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is loamy fine sand, loamy sand, or coarse sand with 0 to 15 percent pebbles. This horizon is absent in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 1 to 4 dry or moist. It is loamy sand, sand, or coarse sand with 0 to 25 percent pebbles and 0 to 5 percent cobbles.

Farrell Series

The Farrell series consists of very deep, well drained soils on terraces and terrace escarpments. These soils formed in glaciofluvial material with a component of loess. Slopes are 0 to 25 percent. Elevation is 850 to 1,500 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Farrell fine sandy loam, 5 to 10 percent slopes, about 15 miles northeast of Bridgeport; 1,450 feet north and 150 feet east of the southwest corner of sec. 20, T. 30 N., R. 28 E., W.M.:

A—0 to 10 inches; brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and common fine roots; common fine tubular pores; 5 percent pebbles; mildly alkaline; clear wavy boundary.

Bw—10 to 22 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine tubular pores; 5 percent pebbles; mildly alkaline; clear wavy boundary.

Bk1—22 to 28 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine tubular pores; 5 percent pebbles; few fine filaments and soft masses of secondary carbonates; strongly effervescent; strongly alkaline; clear wavy boundary.

Bk2—28 to 46 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few fine tubular pores; 5 percent pebbles; common fine filaments and soft masses of secondary carbonates; slightly effervescent; strongly alkaline; gradual wavy boundary.

Bk3—46 to 60 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; few fine tubular pores; 5 percent pebbles; common fine filaments and soft masses of secondary lime; strongly effervescent; strongly alkaline.

The mollic epipedon is 7 to 15 inches thick. Depth to secondary carbonates is 20 to 40 inches. The particle-size control section is 0 to 10 percent rock fragments and 5 to 12 percent clay.

The A horizon has chroma of 2 or 3 dry or moist. It is fine sandy loam or very bouldery fine sandy loam with 0 to 5 percent pebbles. It is neutral or mildly alkaline.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is very fine sandy loam, fine sandy loam, or sandy loam with 0 to 5 percent pebbles. It is neutral or mildly alkaline.

The Bk1 horizon has hue of 10YR or 2.5Y and chroma of 3 or 4 dry or moist. It is very fine sandy loam, fine sandy loam, or sandy loam with 0 to 10 percent pebbles. It is moderately alkaline or strongly alkaline.

The Bk2 and Bk3 horizons have hue of 10YR or 2.5Y and chroma of 2 or 3 dry or moist. They are fine

sandy loam or sandy loam with 0 to 10 percent pebbles. They are moderately alkaline or strongly alkaline.

Fivelakes Series

The Fivelakes series consists of very deep, well drained and moderately well drained soils on glacial outwash terraces and terrace escarpments. These soils formed in glacial outwash with a component of loess in the upper part. Slopes are 0 to 65 percent. Elevation is 1,200 to 2,700 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Fivelakes extremely bouldery loam, 0 to 30 percent slopes, about 9 miles southeast of Nespelem; 500 feet north and 1,500 feet west of the southeast corner of sec. 28, T. 30 N., R. 31 E., W.M.:

A1—0 to 4 inches; grayish brown (10YR 5/2) extremely bouldery loam, very dark grayish brown (10YR 3/2) moist, weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common fine irregular pores; 35 percent boulders, 5 percent pebbles, 15 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.

A2—4 to 12 inches; grayish brown (10YR 5/2) very bouldery loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common fine irregular pores; 5 percent pebbles, 15 percent cobbles, 10 percent stones, and 15 percent boulders; neutral; clear wavy boundary.

Bw1—12 to 18 inches; light yellowish brown (10YR 6/4) very stony loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common fine irregular pores; 20 percent cobbles, 5 percent pebbles, 15 percent stones, and 5 percent boulders; neutral; clear irregular boundary.

Bw2—18 to 30 inches; light yellowish brown (10YR 6/4) very stony sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common fine irregular pores; 20 percent pebbles, 10 percent cobbles, 15 percent stones, and 5 percent boulders; neutral; abrupt wavy boundary.

C—30 to 60 inches; multicolored extremely cobbly coarse sand; single grain; loose, nonsticky and nonplastic; 35 percent pebbles, 20 percent cobbles, and 5 percent stones; neutral.

The mollic epipedon is 9 to 15 inches thick. Depth to the C horizon is 20 to 36 inches. The particle-size control section is 35 to 60 percent rock fragments. The soils of the moist phase (detailed soil map unit 165) have an apparent water table in March and April.

The A1 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is fine sandy loam, stony loam, extremely bouldery loam, or extremely bouldery sandy loam with 0 to 25 percent pebbles, 0 to 35 percent cobbles, and 0 to 45 percent stones and boulders.

The A2 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is fine sandy loam, sandy loam, or loam with 0 to 25 percent pebbles, 0 to 25 percent cobbles, and 0 to 25 percent stones and boulders.

The Bw horizon has value of 5 or 6 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or loam with 5 to 30 percent pebbles, 10 to 25 percent cobbles, and 0 to 25 percent stones and boulders.

The C horizon is multicolored. It is loamy sand, sand, loamy coarse sand, or coarse sand with 30 to 70 percent pebbles, 5 to 45 percent cobbles, and 0 to 5 percent stones.

Friedlander Series

The Friedlander series consists of very deep, well drained soils on backslopes, footslopes, and toeslopes of hills and mountains. These soils formed in residuum and some colluvium derived from granitic and metamorphic rock with a mantle of loess and volcanic ash. Slopes are 0 to 40 percent. Elevation is 2,400 to 4,000 feet. The average annual precipitation is 18 to 22 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Friedlander silt loam, 0 to 20 percent slopes, about 8 miles southeast of Keller; 1,000 feet south and 1,300 feet west of the northeast corner of sec. 17, T. 29 N., R. 34 E., W.M.:

Oi—3 inches to 0; needles, leaves, twigs, and cones.

A—0 to 3 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many

very fine, fine, and medium roots; common fine tubular pores; 2 percent fine pebbles; slightly acid; abrupt smooth boundary.

Bw—3 to 8 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine, fine, medium, and coarse roots; common fine irregular pores; 2 percent fine pebbles; slightly acid; abrupt smooth boundary.

2E—8 to 15 inches; very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots and common fine and medium roots; common fine irregular pores; 2 percent fine pebbles; slightly acid; clear smooth boundary.

2E/Bt—15 to 23 inches; 60 percent very pale brown (10YR 7/3) loam (E part), dark yellowish brown (10YR 4/4) moist, and 40 percent yellowish brown (10YR 5/4) silty clay loam (B part), dark yellowish brown (10YR 3/4) moist; moderate medium angular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and medium roots and common fine roots; common fine irregular pores; many distinct clay films on face of peds and lining pores; 2 percent pebbles; medium acid; clear wavy boundary

2Bt/E—23 to 32 inches; 75 percent brown (7.5YR 5/4) silty clay loam (Bt part), dark brown (7.5YR 3/4) and brown (7.5YR 4/4) moist, and 25 percent light gray (10YR 7/2) loam (E part), brown (10YR 5/3) moist; strong coarse angular blocky structure; very hard, very firm, sticky and plastic; few very fine and common fine roots; common fine irregular pores; many distinct clay films on face of peds and lining pores; 2 percent pebbles; medium acid; clear wavy boundary.

2Bt1—32 to 52 inches; brown (7.5YR 5/4) silty clay loam, dark brown (7.5YR 3/4) moist; strong coarse prismatic and angular blocky structure; extremely hard, extremely firm, very sticky and plastic; few very fine and fine roots; few fine tubular pores; continuous distinct clay films on face of peds and lining pores; 5 percent pebbles; neutral; clear wavy boundary.

2Bt2—52 to 60 inches; brown (7.5YR 5/4) silty clay loam, dark brown (7.5YR 3/4) moist; moderate coarse angular blocky structure; extremely hard, extremely firm, sticky and plastic; few very fine and fine roots; few fine tubular pores; continuous distinct clay films on face of peds and lining pores; 5 percent pebbles; neutral.

The mantle of loess and volcanic ash is 7 to 14 inches thick. The particle-size control section is 35 to 45 percent clay and 2 to 15 percent rock fragments.

The A horizon has hue of 10YR or 7.5YR and chroma of 2 or 3 dry or moist. It is 0 to 5 percent pebbles. The horizon is slightly acid or neutral.

The Bw horizon has hue of 10YR or 7.5YR, value of 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is 0 to 5 percent pebbles. It is slightly acid or neutral.

The 2E horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles.

The E part of the 2E/Bt horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. The Bt part has hue of 10YR or 7.5YR and value of 5 or 6 dry and 3 or 4 moist. The E part is loam or very fine sandy loam with 0 to 10 percent pebbles. It is medium acid or slightly acid.

The Bt part of the 2Bt/E horizon has hue of 7.5YR or 10YR and value of 5 or 6 dry and 3 or 4 moist. It is silty clay loam, clay loam, or loam. The E part has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is silt loam or loam with 0 to 10 percent pebbles.

The 2Bt horizon has hue of 5YR, 7.5YR, or 10YR, value of 4 to 6 dry and 3 or 4 moist, and chroma of 3 to 6 dry or moist. It is clay, silty clay loam, or clay loam with 5 to 10 percent pebbles. It is slightly acid or neutral.

Garrison Series

The Garrison series consists of very deep, well drained soils on outwash terraces. These soils formed in glacial outwash with a component of loess and volcanic ash in the upper part. Slopes are 0 to 30 percent. Elevation is 1,600 to 2,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Garrison loam, 0 to 5 percent slopes, about 7 miles northeast of Nespelem; 700 feet west and 2,000 feet south of the northeast corner of sec. 19, T. 32 N., R. 31 E., W.M.:

Oi—1.5 inches to 0.5 inch; needles, twigs, and cones.

Oe—0.5 inch to 0; partially decomposed needles and twigs.

A—0 to 12 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine, and medium roots; common fine irregular pores; 5 percent pebbles; neutral; clear smooth boundary.

Bw1—12 to 18 inches; brown (10YR 5/3) gravelly

loam, dark brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, fine, and medium roots; common fine irregular pores; 15 percent pebbles; neutral; clear wavy boundary.

Bw2—18 to 28 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; common fine tubular pores; 35 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

2C1—28 to 41 inches; pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common fine irregular pores; 50 percent pebbles and 5 percent cobbles; neutral; gradual smooth boundary.

2C2—41 to 60 inches; multicolored extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine, fine, and medium roots; common fine irregular pores; 60 percent pebbles and 10 percent cobbles; neutral.

Depth to the 2C horizon is 24 to 36 inches. The particle-size control section is 35 to 70 percent rock fragments. The profile is neutral or slightly acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist. It is loam or gravelly loam with 0 to 30 percent pebbles.

The Bw horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam with 20 to 40 percent pebbles and 0 to 10 percent cobbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 6 moist, and chroma of 3 or 4 dry or moist. It is loamy sand or coarse sand with 50 to 75 percent pebbles, 5 to 30 percent cobbles, and 0 to 5 percent stones.

Georgecreek Series

The Georgecreek series consists of deep, well drained soils on summits, shoulders, and backslopes of hills. These soils formed in residuum derived from granitic rock with a component of loess and volcanic ash. Slopes are 5 to 40 percent. Elevation is 1,800 to 3,400 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Georgecreek silt loam, 5 to 20 percent slopes, about 11 miles southeast of Nespelem; 1,800 feet west and 1,100 feet north of the southeast corner of sec. 1, T. 29 N., R. 31 E., W.M.:

Oi—2 inches to 0; needles, twigs, leaves, and cones.

A1—0 to 6 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common fine irregular pores; neutral; clear wavy boundary.

A2—6 to 11 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common fine irregular pores; neutral; clear wavy boundary.

BA—11 to 19 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine, and medium roots; few fine tubular pores; neutral; clear wavy boundary.

Bt1—19 to 35 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; common fine tubular pores; common faint clay films on faces of peds and in pores; neutral; clear wavy boundary.

Bt2—35 to 53 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; few thin clay films on faces of peds and in pores; mildly alkaline; gradual wavy boundary.

BC—53 to 58 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; 5 percent pebbles; slightly effervescent; mildly alkaline; abrupt wavy boundary.

Cr—58 to 68 inches; weathered granitic bedrock.

The mollic epipedon is 7 to 16 inches thick. The solum is 25 to 60 inches thick. Depth to weathered bedrock is 40 to 60 inches. The particle-size control section is 18 to 35 percent clay, 25 to 50 percent medium, coarse, and very coarse sand, and 0 to 25 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is silt

loam or loam with 0 to 15 percent pebbles. It is slightly acid or neutral.

The BA horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is silt loam or loam with 0 to 15 percent pebbles. It is slightly acid or neutral.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is loam, clay loam, or sandy clay loam with 0 to 25 percent pebbles. It is slightly acid to mildly alkaline.

The BC and C horizons have hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. They are loam or sandy loam with 5 to 30 percent pebbles and 0 to 2 percent cobbles. They are neutral or mildly alkaline. These horizons are absent in some pedons.

Ginnis Series

The Ginnis series consists of moderately deep, well drained soils on footslopes, backslopes, and shoulders of hills. These soils formed in residuum and colluvium derived from granitic rock with a component of loess. Slopes are 5 to 65 percent. Elevation is 1,400 to 3,200 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Ginnis loam, 15 to 35 percent slopes, about 4 miles northeast of Coulee Dam; 2,000 feet south and 600 feet east of the northwest corner of sec. 26, T. 29 N., R. 31 E., W.M.:

A—0 to 10 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and common fine roots; many very fine continuous interstitial pores; 5 percent fine pebbles; neutral; clear wavy boundary.

Bw1—10 to 22 inches; brown (10YR 5/3) gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; common very fine interstitial pores and few very fine tubular pores; 15 percent pebbles; neutral; clear wavy boundary.

Bw2—22 to 31 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and nonplastic; few very fine and fine roots; common fine interstitial pores; 20 percent pebbles; neutral; abrupt wavy boundary.

Cr—31 to 41 inches; weathered granitic bedrock.

The mollic epipedon is 8 to 14 inches thick. Depth to weathered bedrock is 20 to 40 inches. The particle-size control section is 10 to 35 percent rock fragments, but individual subhorizons are as much as 45 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loam, cobbly loam, or stony sandy loam with 5 to 20 percent pebbles, 0 to 15 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is loam, sandy loam, or coarse sandy loam with 10 to 35 percent pebbles and 0 to 20 percent cobbles.

The C horizon, where present, has value of 6 or 7 dry and 4 or 5 moist. It is sandy loam or coarse sandy loam with 5 to 30 percent pebbles.

Glenrose Series

The Glenrose series consists of very deep, well drained soils on foothills. These soils formed in glacial till with a mantle of loess and volcanic ash. Slopes are 8 to 30 percent. Elevation is 1,300 to 2,900 feet. The average annual precipitation is 17 to 20 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Glenrose silt loam, 8 to 15 percent slopes, about 17 miles south of Inchelium; 900 feet south and 1,450 feet east of the northwest corner of sec. 33, T. 30 N., R. 36 E., W.M.:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure parting to weak very fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common fine irregular pores; 5 percent pebbles; slightly acid; clear smooth boundary.

A—5 to 13 inches; grayish brown (10YR 5/2) silt loam, dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common fine irregular pores; 5 percent pebbles; slightly acid; clear wavy boundary.

BA—13 to 16 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very

fine roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.
2E—16 to 27 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; few fine tubular pores; 10 percent pebbles; slightly acid; abrupt irregular boundary.
2Bt1—27 to 39 inches; very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, firm, sticky and slightly plastic; few very fine roots; few fine tubular pores; common thin clay films on faces of peds; 10 percent pebbles; slightly acid; clear wavy boundary.
2Bt2—39 to 60 inches; very pale brown (10YR 7/3) gravelly loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common thin clay films on faces of peds; 15 percent pebbles; slightly acid.

The mollic epipedon is 10 to 20 inches thick. The particle-size control section is 5 to 20 percent rock fragments and 18 to 27 percent clay. The profile is slightly acid or neutral.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist.

The BA horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist.

The 2E horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is silt loam or loam with 5 to 20 percent pebbles.

The 2Bt horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma 2 to 6 dry or moist. It is loam or silt loam with 0 to 20 percent pebbles.

Goddard Series

The Goddard series consists of very deep, well drained soils on terraces and terraces escarpments. These soils formed in glacial outwash with a mantle of volcanic ash. Slopes are 0 to 65 percent. Elevation is 2,000 to 3,900 feet. The average annual precipitation is 16 to 19 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Goddard silt loam, 0 to 20 percent slopes, about 21 miles northeast of Nespelem; 2,600 feet south and 500 feet east of the northwest corner of sec. 17, T. 34 N., R. 32 E., W.M.:

Oi—1 inch to 0; needles, leaves, and twigs.
A—0 to 3 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium and coarse roots; common fine tubular pores; 5 percent pebbles; neutral; clear wavy boundary.
Bw—3 to 10 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, medium, and coarse roots; common fine irregular pores; 10 percent pebbles; slightly acid; abrupt wavy boundary.
2BC—10 to 18 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine irregular pores; 30 percent pebbles; neutral; clear wavy boundary.
2C1—18 to 30 inches; pale brown (10YR 6/3) very gravelly loamy sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 40 percent pebbles and 10 percent cobbles; neutral; gradual wavy boundary.
2C2—30 to 60 inches; multicolored very gravelly loamy coarse sand; single grain; loose, nonsticky and nonplastic; few fine roots; few fine tubular pores; 45 percent pebbles and 10 percent cobbles; neutral.

The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 35 to 60 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam with 0 to 20 percent pebbles.

The 2BC horizon is sandy loam or coarse sandy loam with 0 to 10 percent cobbles and 15 to 30 percent pebbles.

The 2C horizon has value of 6 or 7 dry and 3 to 5 moist, and it has chroma of 2 to 4 dry or moist. It is loamy sand or coarse sand with 30 to 60 percent pebbles and 10 to 20 percent cobbles.

Goldlake Series

The Goldlake series consists of soils that are deep to dense glacial till and are moderately well drained. These soils are in swales and draws of glaciated foothills. They formed in glacial till with a component of loess, volcanic ash, and slope alluvium in the upper part. Slopes are 0 to 8 percent. Elevation is 2,000 to

3,500 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Goldlake silt loam, 0 to 8 percent slopes, about 7 miles north of Nespelem; 1,200 feet east and 700 feet south of the northwest corner of sec. 19, T. 32 N., R. 31 E., W.M.:

Oi—3 inches to 0.5 inch; needles, twigs, leaves, and mosses.

Oe—0.5 inch to 0; partially decomposed litter and mosses.

A1—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, black (10YR 2/1) moist; strong medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; common fine irregular pores; 3 percent pebbles; neutral; clear wavy boundary.

A2—8 to 22 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots, common coarse roots; common fine irregular pores; 3 percent pebbles; neutral; abrupt smooth boundary.

Bw1—22 to 29 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; few fine tubular pores; 15 percent pebbles, 5 percent cobbles, and 2 percent stones; neutral; clear smooth boundary.

Bw2—29 to 40 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 20 percent pebbles, 10 percent cobbles, and 2 percent stones; neutral; clear smooth boundary.

2Cd—40 to 60 inches; very pale brown (10YR 7/3) dense glacial till that crushes to gravelly coarse sandy loam, brown (10YR 5/3) moist; few fine distinct brown (7.5YR 5/4) mottles, dark brown (7.5YR 3/4) moist; massive; hard, friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 20 percent pebbles, 10 percent cobbles, and 2 percent stones; neutral.

Depth to dense glacial till is 40 to 60 inches. The mollic epipedon is 20 to 28 inches thick. The particle-size control section is 8 to 15 percent clay and 10 to 25 percent rock fragments. The profile is neutral or slightly acid. An apparent water table is present in March through May.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam or loam in the upper part and loam or sandy loam in the lower part. The horizon is 10 to 30 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is loam, sandy loam, or coarse sandy loam with 15 to 40 percent pebbles, 5 to 20 percent cobbles, and 0 to 5 percent stones.

Gooseflats Series

The Gooseflats series consists of soils that are deep to a duripan and very deep and are somewhat poorly drained and moderately well drained. These soils are in draws and valley flats that have swales and swells. They formed in alluvium derived from glacial outwash material. Slopes are 0 to 2 percent. Elevation is 800 to 2,400 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Gooseflats fine sandy loam, somewhat poorly drained, in an area of Gooseflats fine sandy loams complex, 0 to 2 percent slopes, about 20 miles west of Nespelem; 1,650 feet west and 1,900 feet north of the southeast corner of sec. 32, T. 31 N., R. 28 E., W.M.:

Akzn1—0 to 4 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common fine irregular pores; violently effervescent; very strongly alkaline; gradual smooth boundary.

Akzn2—4 to 7 inches; grayish brown (10YR 5/2) fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine irregular pores; strongly effervescent; very strongly alkaline; clear smooth boundary.

Bkzn1—7 to 20 inches; light brownish gray (10YR 6/2) loamy fine sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; common fine

tubular pores; violently effervescent; strongly alkaline; gradual smooth boundary.

Bkzn2—20 to 30 inches; light brownish gray (10YR 6/2) loamy fine sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common fine irregular pores; violently effervescent; strongly alkaline; abrupt smooth boundary.

Bkgz—30 to 41 inches; light gray (2.5Y 7/2) fine sand, grayish brown (2.5Y 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; violently effervescent; strongly alkaline; abrupt smooth boundary.

Bkqmz—41 to 48 inches; light gray (2.5Y 7/2) weakly lime- and silica-cemented duripan that crushes to fine sand, olive (5Y 5/3) moist; massive; common fine and medium distinct olive yellow (2.5Y 6/6) mottles; massive; extremely hard, extremely firm, nonsticky and nonplastic; strongly cemented discontinuous layers 0.25 to 0.50 inch thick; violently effervescent; strongly alkaline; clear smooth boundary.

Cg—48 to 60 inches; light gray (5Y 7/2) fine sand, olive (5Y 5/3) moist; massive; common fine and medium distinct olive yellow (2.5Y 6/6) mottles; massive; soft, very friable, nonsticky and nonplastic; strongly effervescent; very strongly alkaline.

Depth to the duripan is 40 to 60 inches. The particle-size control section is loamy fine sand or fine sand with 0 to 5 percent rock fragments. The sodium adsorption ratio is 15 to 35 throughout the profile. These soils are strongly saline in the upper 7 inches and moderately saline between depths of 7 and 60 inches. An apparent water table is present in January through May. The soils of the somewhat poorly drained phase are ponded in March and April.

The Akzn horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 5 to 7 dry and 3 to 6 moist, and chroma of 1 to 3 dry or moist.

The Bkzn horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 1 to 4 dry or moist. It is loamy fine sand or fine sand.

The Bkgz horizon has hue of 2.5Y or 5Y, value of 6 to 8 dry and 5 to 7 moist, and chroma of 0 to 3 dry or moist.

The Bkqmz horizon has hue of 2.5Y or 5Y, value of 6 to 8 dry and 5 or 6 moist, and chroma of 0 to 3 dry or moist. It is weakly cemented or strongly cemented. This horizon is absent in some pedons.

The Cg horizon has hue of 2.5Y or 5Y, value of 6 to 8 dry and 5 or 6 moist, and chroma of 0 to 3 dry or moist. It is loamy fine sand or fine sand. This horizon is absent in some pedons.

Growden Series

The Growden series consists of very deep, well drained soils on south-facing backslopes of mountains. These soils formed in residuum and colluvium derived from schist, quartzite, and granitic gneiss with a mantle of loess and volcanic ash. Slopes are 20 to 50 percent. Elevation is 5,500 to 6,500 feet. The average annual precipitation is 25 to 30 inches, the average annual air temperature is 39 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Growden channery silt loam, 20 to 50 percent slopes, about 16 miles northwest of Inchelium; 300 feet west of the southeast corner of sec. 27, T. 34 N., R. 34 E., W.M.:

A1—0 to 4 inches; dark grayish brown (10YR 4/2) channery silt loam, very dark brown (10YR 2/2) moist; weak fine and medium granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; common fine irregular pores; 20 percent channers, 5 percent flagstones, and 1 percent stones; medium acid (NaF pH 11.0); clear wavy boundary.

A2—4 to 10 inches; brown (10YR 5/3) flaggy silt loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; common fine irregular pores; 15 percent channers, 10 percent flagstones, and 1 percent stones; medium acid (NaF pH 11.0); clear wavy boundary.

Bw1—10 to 16 inches; yellowish brown (10YR 5/4) very channery silt loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common fine irregular pores; 30 percent channers and 15 percent flagstones; medium acid; clear wavy boundary.

Bw2—16 to 22 inches; light yellowish brown (10YR 6/4) very flaggy silt loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; common fine irregular pores; 30 percent channers and 20 percent flagstones; medium acid; clear wavy boundary,

C—22 to 60 inches; very pale brown (10YR 7/3)

extremely flaggy sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; 30 percent channers and 45 percent flagstones; medium acid.

The umbric epipedon is 8 to 18 inches thick. The solum is 20 to 40 inches thick. The particle-size control section is 8 to 16 percent clay and 35 to 80 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 30 percent channers and 0 to 15 percent flagstones.

The Bw horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam with 25 to 45 percent channers and 5 to 25 percent flagstones. It is medium acid or slightly acid.

The C horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam with 25 to 45 percent channers and 15 to 45 percent flagstones. It is medium acid or slightly acid.

Hadencreek Series

The Hadencreek series consists of very deep, moderately well drained soils on glacial lake terraces and basins. These soils formed in glacial lake sediment with a component of loess and volcanic ash. Slopes are 0 to 8 percent. Elevation is 1,700 to 3,600 feet. The average annual precipitation is 16 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 110 days.

Typical pedon of Hadencreek silt loam, 0 to 8 percent slopes, about 7 miles northeast of Disautel; 1,950 feet north and 1,750 feet west of the southeast corner of sec. 25, T. 34 N., R. 29 E., W.M.:

Ap—0 to 13 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine tubular pores; neutral; abrupt smooth boundary.

Bw1—13 to 18 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; common very fine tubular pores; mildly alkaline; clear irregular boundary.

Bw2—18 to 32 inches; pale yellow (2.5Y 7/3) silt loam, light olive brown (2.5Y 5/3) moist; moderate fine angular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; moderately alkaline; clear wavy boundary.

Bk1—32 to 40 inches; pale yellow (2.5Y 7/3) silty clay loam, light olive brown (2.5Y 5/3) moist; massive; hard, firm, sticky and plastic; few very fine roots; few very fine tubular pores; common fine secondary masses of lime in irregularly shaped seams; strongly effervescent; highly stratified; moderately alkaline; clear wavy boundary.

Bk2—40 to 60 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, friable, sticky and plastic; few very fine tubular pores; common fine secondary masses of lime in irregularly shaped seams and filaments; slightly effervescent; highly stratified; mildly alkaline.

Depth to secondary carbonates is 20 to 36 inches. The particle-size control section is 18 to 27 percent clay and less than 15 percent fine sand or coarser. An apparent water table is present in January through May.

The Ap or A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 or 3 dry or moist. It is neutral or mildly alkaline.

The Bk horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is stratified very fine sandy loam to silty clay loam. It is mildly alkaline or moderately alkaline.

The C horizon, where present, has hue of 2.5Y, value of 6 to 8 dry and 4 to 6 moist, and chroma of 2 or 3 dry or moist. It is silt loam or silty clay loam and typically has thin strata of very fine sandy loam. It is mildly alkaline.

Haley Series

The Haley series consists of very deep, well drained soils on outwash terraces and terrace escarpments. These soils formed in glacial outwash with a component of loess in the upper part. Slopes are 0 to 25 percent. Elevation is 1,500 to 2,600 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Haley fine sandy loam, 0 to 5

percent slopes, about 3 miles south of Nespelem; 2,000 feet north and 1,100 west of the southeast corner of sec. 1, T. 30 N., R. 30 E., W.M.:

A1—0 to 6 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; neutral; clear wavy boundary.
A2—6 to 12 inches; grayish brown (10YR 5/2) fine sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; neutral; gradual wavy boundary.
Bw—12 to 24 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; common fine irregular pores; neutral; clear wavy boundary.
BC—24 to 28 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine roots; few fine tubular pores; neutral; clear wavy boundary.
2C1—28 to 40 inches; brown (10YR 5/3) and pale brown (10YR 6/3) loamy sand, dark brown (10YR 3/3) and brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few fine tubular pores; 5 percent pebbles; neutral; abrupt wavy boundary.
2C2—40 to 60 inches; multicolored sand; single grain; loose, nonsticky and nonplastic; 10 percent pebbles; neutral.

The mollic epipedon is 10 to 16 inches thick. Thickness of the solum and depth to the 2C horizon are 20 to 30 inches. The particle-size control section is 0 to 5 percent pebbles.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist.

The Bw and BC horizons have value of 4 to 6 dry and 3 to 5 moist, and they have chroma of 3 or 4 dry or moist. They are 0 to 5 percent pebbles.

The 2C horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is loamy fine sand, loamy sand, sand, or coarse sand that commonly becomes coarser as depth increases. The horizon is 0 to 15 percent pebbles. It is neutral or mildly alkaline.

Hallcreek Series

The Hallcreek series consists of very deep, well drained soils on outwash terraces. These soils formed in glacial outwash with a mantle of volcanic ash and loess. Slopes are 0 to 10 percent. Elevation is 1,700 to 2,700 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Hallcreek loam, 0 to 10 percent slopes, about 7 miles west of Nespelem; 1,500 feet north and 800 feet west of the southeast corner of sec. 2, T. 31 N., R 29 E., W.M.:

Oi—1 inch to 0; needles, leaves, and twigs.
A—0 to 3 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common fine tubular pores; 10 percent pebbles; neutral; clear wavy boundary.
Bw—3 to 11 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common fine tubular pores; 10 percent pebbles; neutral; clear wavy boundary.
2BC—11 to 17 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and coarse roots; common fine irregular pores; 20 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.
2C—17 to 60 inches; light gray (10YR 7/2) extremely gravelly sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 50 percent pebbles and 20 percent cobbles; neutral.

The mantle of volcanic ash is 7 to 14 inches thick. Depth to the 2C horizon is 10 to 24 inches. The particle-size control section is 35 to 70 percent rock fragments.

The A horizon has chroma of 2 or 3 dry or moist. It is slightly acid or neutral.

The Bw horizon has chroma of 3 or 4 dry or moist. It is 5 to 15 percent pebbles. It is slightly acid or neutral.

The 2BC horizon has chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 20 to 40 percent pebbles and 5 to 10 percent cobbles. It is slightly acid or neutral.

The 2C horizon has value of 6 or 7 dry and 4 or 5 moist. It is sand or coarse sand with 35 to 60 percent pebbles, 20 to 30 percent cobbles, and 0 to 5 percent stones. It is medium acid to neutral.

Haploxerolls

Haploxerolls consist of moderately deep to very deep, well drained and somewhat excessively drained soils on terrace escarpments. These soils formed in glacial outwash, glaciofluvial material, and glacial lake sediment. The parent material commonly has been mixed by colluvial action, and it is stratified in some areas. Slopes are 30 to 70 percent and mainly face north and east. Elevation is 1,200 to 2,600 feet. The average annual precipitation is 11 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Reference pedon of Haploxerolls, 30 to 70 percent slopes, about 11 miles southwest of Nespelem; 200 feet east and 2,600 feet south of the northwest corner of sec. 5, T. 30 N., R. 29 E., W.M.:

A1—0 to 3 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; 20 percent rounded pebbles and 5 percent cobbles; neutral; clear wavy boundary.

A2—3 to 11 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; 35 percent rounded pebbles and 5 percent cobbles; neutral; clear wavy boundary.

AC—11 to 17 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine irregular pores; 40 percent rounded pebbles and 5 percent cobbles; neutral; gradual wavy boundary.

C1—17 to 35 inches; light brownish gray (10YR 6/2) very gravelly sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 50 percent rounded pebbles and 2 percent cobbles; neutral; clear wavy boundary.

C2—35 to 60 inches; light gray (10YR 7/2) gravelly sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 20 percent pebbles; mildly alkaline.

The mollic epipedon is 10 to 25 inches thick. Depth to bedrock is 20 to 80 inches. The particle-size control section is 5 to 30 percent clay and averages 10 to 60 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 10 to 50 percent pebbles, 0 to 15 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline.

The C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 or 3 dry or moist. It is loamy sand or sand with 10 to 50 percent pebbles, 0 to 20 percent cobbles, and 0 to 5 percent stones. It is neutral to moderately alkaline.

Hartill Series

The Hartill series consists of moderately deep, well drained soils on backslopes and shoulders of mountains. These soils formed in residuum and colluvium derived from metamorphic rock with a mantle of volcanic ash. Slopes are 20 to 65 percent. Elevation is 2,300 to 4,800 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Hartill silt loam, dry, 20 to 40 percent slopes, about 15 miles southwest of Inchelium; 200 feet south and 1,400 feet west of the northeast corner of sec. 23, T. 31 N., R. 34 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.

A—0 to 6 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; 5 percent channers; slightly acid; clear wavy boundary.

Bw1—6 to 14 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine irregular pores; 10 percent channers; slightly acid; abrupt wavy boundary.

2Bw2—14 to 30 inches; pale brown (10YR 6/3) very channery sandy loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and nonplastic; many very

fine and fine roots and common medium and coarse roots; common fine irregular pores; 40 percent channers and 15 percent flagstones; neutral; clear wavy boundary.

2C—30 to 39 inches; pale brown (10YR 6/3) extremely flaggy sandy loam, brown (10YR 5/3) moist; massive; soft, friable, slightly sticky and nonplastic; common very fine and fine roots and few medium roots; few fine tubular pores; 50 percent channers, 20 percent flagstones, and 5 percent stones; neutral; abrupt irregular boundary.

2R—39 to 43 inches; graywacke bedrock.

Depth to bedrock is 20 to 40 inches. The mantle of volcanic ash is 7 to 14 inches thick. The profile is slightly acid or neutral.

The A horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry and 2 to 4 moist. It is 5 to 15 percent channers.

The Bw1 horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 to 5 moist, and chroma of 3 or 4 dry and 2 to 4 moist. It is silt loam or loam with 5 to 15 percent channers.

The 2Bw2 horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is sandy loam or loam with 30 to 45 percent channers, 5 to 15 percent flagstones, and 0 to 5 percent stones.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 5 or 6 moist, and chroma of 3 or 4 dry or moist. It is sandy loam or loam with 30 to 50 percent channers, 15 to 25 percent flagstones, and 0 to 5 percent stones.

Hellgate Series

The Hellgate series consists of very deep, well drained soils on toeslopes of mountains and on fan terraces. These soils formed in colluvium, residuum, and valley fill derived from granitic rock with a minor component of loess and volcanic ash. Slopes are 3 to 20 percent. Elevation is 1,600 to 2,700 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Hellgate gravelly coarse sandy loam, 3 to 20 percent slopes, about 8 miles southwest of Keller; 800 feet south and 1,750 feet east of the northwest corner of sec. 1, T. 28 N., R. 32 E., W.M.:

Oi—3 inches to 0; needles, leaves, and twigs.

A—0 to 8 inches; grayish brown (10YR 5/2) gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, and few medium roots; common fine irregular pores; 25 percent fine pebbles; neutral; abrupt wavy boundary.

AB—8 to 12 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine irregular pores; 20 percent fine pebbles; neutral; clear wavy boundary.

Bw—12 to 25 inches; very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; few fine tubular pores; 15 percent fine pebbles and 5 percent coarse pebbles; neutral; abrupt smooth boundary.

C1—25 to 36 inches; pale brown (10YR 6/3) very gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 25 percent fine pebbles, 15 percent coarse pebbles, and 5 percent cobbles; mildly alkaline; gradual wavy boundary.

C2—36 to 60 inches; multicolored very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; 30 percent fine pebbles and 10 percent coarse pebbles; neutral.

The mollic epipedon is 8 to 18 inches thick. Thickness of the solum is 22 to 36 inches. The particle-size control section is 5 to 12 percent clay and 15 to 35 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is gravelly loam or gravelly coarse sandy loam with 15 to 30 percent pebbles. It is slightly acid or neutral.

The AB horizon is absent in some pedons.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 10 to 35 percent pebbles and 0 to 5 percent cobbles. It is slightly acid or neutral.

The upper part of the C horizon has hue of 2.5Y or 10YR, value of 6 or 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist, and the lower part is multicolored. The horizon is coarse sandy loam, loamy coarse sand, or coarse sand with 25 to 50 percent pebbles and 0 to 5 percent cobbles. It is neutral or mildly alkaline.

Henneway Series

The Henneway series consists of deep, well drained soils on toeslopes and footslopes of hills and mountains. These soils formed in residuum and colluvium derived from metasedimentary rock with a mantle of volcanic ash. Slopes are 0 to 40 percent. Elevation is 2,400 to 3,700 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature as 42 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Henneway silt loam, 20 to 40 percent slopes, about 10 miles northeast of Keller; 600 feet south and 950 feet west of the northeast corner of sec. 13, T. 31 N., R. 33 E., W.M.:

Oi—3 inches to 0; twigs, needles, cones, and bark.

A—0 to 3 inches; dark yellowish brown (10YR 4/4) silt loam, dark yellowish brown (10YR 3/4) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, common fine and medium, and few coarse roots; common fine tubular pores; 5 percent channers; neutral; clear smooth boundary.

Bw—3 to 10 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; common fine tubular pores; 5 percent channers; neutral; clear wavy boundary.

2BE—10 to 15 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common fine irregular pores; 5 percent channers; neutral; clear smooth boundary.

2Bt/E—15 to 28 inches; 60 percent brown (10YR 5/3) silt loam (Bt part), dark brown (10YR 3/3) moist, and 40 percent pale brown (10YR 6/3) silt loam (E part), brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; few faint clay films on faces of peds (B part); neutral; gradual smooth boundary.

2Bt1—28 to 41 inches; yellowish brown (10YR 5/4) silty clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; few fine tubular pores; common faint clay films lining pores and on faces of peds; 10 percent channers; neutral; clear smooth boundary.

2Bt2—41 to 49 inches; light olive brown (2.5Y 5/4) channery silty clay loam, olive brown (2.5Y 4/4) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; common faint clay films lining pores and on faces of peds; 15 percent channers; neutral; gradual smooth boundary.

2Bt3—49 to 51 inches; olive yellow (2.5Y 6/6) channery clay loam, light olive brown (2.5Y 5/6) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; common faint clay films lining pores and on faces of peds; 30 percent channers; neutral; abrupt smooth boundary.

2BCt—51 to 59 inches; light olive brown (2.5Y 5/4) channery silt loam, olive brown (2.5Y 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; few faint clay films lining pores; 30 percent channers; neutral; gradual smooth boundary.

2R—59 to 63 inches; phyllite bedrock.

Depth to bedrock is 40 to 60 inches. The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 18 to 35 percent clay and 5 to 35 percent hard channers and pebbles. It is neutral or slightly acid throughout.

The A horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is 0 to 10 percent channers.

The Bw horizon has value of 5 or 6 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is 0 to 10 percent channers.

The 2BE horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 1 to 3 dry or moist. It is 0 to 10 percent channers and 0 to 15 percent soft weathered channers.

The Bt part of the 2Bt/E horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry, and chroma of 2 or 3 dry or moist. The E part has hue of 10YR or 2.5Y, value of 5 or 6 dry, and chroma of 2 to 4 dry or moist. The horizon is silt loam or loam with 0 to 10 percent channers and 10 to 20 percent soft weathered channers.

The 2Bt horizon has hue of 10YR or 2.5Y, value of 4 to 6 dry and 3 to 5 moist, and chroma of 2 to 6 dry or moist. It is silt loam, silty clay loam, loam, or clay loam with 0 to 35 percent channers and 5 to 20 percent soft weathered channers.

The 2BCt horizon has hue of 2.5Y or 10YR, value of 5 or 6 dry and 4 or 5 moist, and chroma of 2 to 4 dry

or moist. It is silt loam or loam with 15 to 35 percent channers and 10 to 20 percent soft weathered channers.

Heytou Series

The Heytou series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on backslopes of glaciated hills. They formed in glacial till derived from basalt with an admixture of loess. Slopes are 25 to 65 percent. Elevation is 1,200 to 2,000 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Heytou stony loam in an area of Heytou-Stubblefield stony loams complex, 25 to 65 percent slopes, about 4 miles northeast of Bridgeport; 2,600 feet east and 1,900 feet north of the southwest corner of sec. 32, T. 30 N., R. 26 E., W.M.:

A1—0 to 4 inches; gray (10YR 5/1) stony loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine interstitial pores; 15 percent pebbles, 5 percent cobbles, and 3 percent stones; mildly alkaline; gradual wavy boundary.

A2—4 to 16 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few fine interstitial pores; 25 percent pebbles and 5 percent cobbles; mildly alkaline; clear wavy boundary.

Bw—16 to 30 inches; grayish brown (10YR 5/2) very cobbly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine and medium interstitial pores; 20 percent pebbles, 15 percent cobbles, and 5 percent stones; mildly alkaline; clear wavy boundary.

2Bkd1—30 to 40 inches; light brownish gray (10YR 6/2) dense glacial till that crushes to very cobbly loam, dark grayish brown (10YR 4/2) moist; massive; hard, friable, nonsticky and nonplastic; very few very fine and fine roots; common fine and medium interstitial pores; slightly effervescent; 20 percent pebbles, 25 percent cobbles, and 5 percent stones; moderately alkaline; gradual wavy boundary.

2Bkd2—40 to 60 inches; gray (10YR 6/1) dense glacial till that crushes to very gravelly loam, dark yellowish brown (10YR 4/2) moist; massive; hard, friable, nonsticky and nonplastic; common fine and medium interstitial pores; slightly effervescent; 25 percent pebbles, 15 percent cobbles, and 5 percent stones; moderately alkaline.

Depth to dense glacial till is 20 to 40 inches. The mollic epipedon is 10 to 17 inches thick. Depth to secondary carbonates is 20 to 36 inches. The particle-size control section is 35 to 55 percent rock fragments.

The A horizon has value of 4 or 5 dry and chroma of 1 or 2 dry. It is 10 to 25 percent pebbles, 2 to 5 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry and 2 or 3 moist. It is sandy loam or loam with 25 to 45 percent pebbles, 10 to 20 percent cobbles, and 0 to 5 percent stones.

The 2Bkd horizon has hue of 10YR or 2.5Y, value of 3 or 4 moist, and chroma of 2 to 4 dry and 2 or 3 moist. It is sandy loam or loam with 0 to 5 percent stones, 15 to 25 percent cobbles, and 25 to 45 percent pebbles. It is mildly alkaline or moderately alkaline.

Histosols

Histosols consist of very deep, very poorly drained soils in backswamps of flood plains and in depressions surrounding lakes and ponds. These soils formed in decomposed organic matter overlying alluvial material that commonly contains a large component of volcanic ash. Slopes are 0 to 1 percent. Elevation is 1,500 to 4,000 feet. The average annual precipitation is 10 to 25 inches, the average annual air temperature is 41 to 47 degrees F, and the frost-free period is 80 to 150 days.

Reference pedon of Histosols, ponded, about 6 miles northeast of Nespelem; 800 feet north and 800 feet west of the southeast corner of sec. 2, T. 31 N., R. 31 E., W.M.:

Oe—0 to 4 inches; mucky peat that is black (10YR 2/1) moist and very dark gray (10YR 3/1) dry; about 35 percent fiber, 20 percent rubbed; moderate fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common fine vesicular pores; common fine irregular pores; slightly acid; clear smooth boundary.

Oa—4 to 20 inches; muck that is black (10YR 2/1) moist and very dark gray (10YR 3/1) dry; about 20 percent fiber, 5 percent rubbed; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots;

common fine irregular pores; slightly acid; gradual smooth boundary.
2C—20 to 32 inches; silt loam that is very dark brown (10YR 2/2) moist and very dark grayish brown (10YR 3/2) dry; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; few fine tubular pores; neutral; clear smooth boundary.
2Cg—32 to 60 inches; silt loam that is gray (10YR 6/1) moist and light gray (10YR 7/1) dry; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; neutral.

An apparent water table is present throughout the year. These soils are ponded in November through August. The organic material is 16 to 60 inches thick or more. The control section is sapric, hemic, or fibric material and is 15 to 70 percent fiber, of which 5 to 50 percent is rubbed.

The O horizons have hue of 5YR, 7.5YR, or 10YR, value of 3 or 4 dry and 2 or 3 moist, and chroma of 0 to 2 dry or moist. They are medium acid or slightly acid.

The 2C and 2Cg horizons, where present, have hue of 10YR, 2.5Y, or 5Y, value of 3 to 5 dry and 2 to 5 moist, and chroma of 1 or 2 dry or moist. They are silt loam, fine sandy loam, sand, loam, or clay loam with 0 to 50 percent pebbles and 0 to 5 percent cobbles. The horizons are slightly acid or neutral.

Hobohill Series

The Hobohill series consists of very deep, somewhat excessively drained soils on fan terraces, old alluvial fans, and terrace escarpments. These soils formed in glacial outwash and alluvium. Slopes are 3 to 70 percent. Elevation is 1,400 to 2,500 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Hobohill sandy loam, 40 to 70 percent slopes, about 5 miles southeast of Nespelem; 1,000 feet north and 1,000 feet west of the southeast corner of sec. 10, T. 30 N., R. 31 E., W.M.:

A1—0 to 3 inches; dark grayish brown (10YR 4/2) sandy loam, black (10YR 2/1) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; 10 percent pebbles; neutral; clear wavy boundary.
A2—3 to 18 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine irregular pores; 10 percent pebbles; neutral; clear smooth boundary.
C1—18 to 30 inches; pale brown (10YR 6/3) gravelly loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 15 percent pebbles; neutral; gradual smooth boundary.
C2—30 to 60 inches; light gray (2.5Y 7/2) gravelly sand, grayish brown (2.5Y 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 25 percent pebbles; neutral.

The mollic epipedon is 10 to 20 inches thick. The particle-size control section is 10 to 30 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 moist. It is sandy loam or stony sandy loam. The upper part is 0 to 10 percent pebbles, 0 to 5 percent cobbles, and 0 to 5 percent stones, and the lower part is 10 to 25 percent pebbles.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 5 or 6 moist, and chroma of 2 or 3 dry or moist. The upper part is sand, loamy sand, or loamy coarse sand with 10 to 25 percent pebbles and 0 to 10 percent cobbles. The lower part is loamy coarse sand, coarse sand, or sand with 15 to 40 percent pebbles and 0 to 5 percent cobbles.

Hodgson Series

The Hodgson series consists of very deep, moderately well drained soils on terraces and terrace escarpments. These soils formed in glacial lake sediment with a component of loess and volcanic ash. Some areas formed in landslide or mudflow deposits. Slopes are 0 to 50 percent. Elevation is 1,300 to 2,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 120 days.

Typical pedon of Hodgson silt loam, 0 to 5 percent slopes, about 2.5 miles southeast of Inchelium; 1,600 feet north and 20 feet east of the southwest corner of sec. 17, T. 32 N., R. 37 E., W.M.:

Oi—2 inches to 0; needles, twigs, and leaves.
A—0 to 3 inches; light brownish gray (2.5Y 6/2) silt loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots;

common fine irregular pores; slightly acid; clear wavy boundary.

B/E—3 to 7 inches; light brownish gray (2.5Y 6/2) silty clay loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine roots and few medium and coarse roots; common fine irregular pores; neutral; clear wavy boundary.

Bt1—7 to 17 inches; light gray (2.5Y 7/2) silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine roots; common fine irregular pores; few faint clay films on faces of peds and in pores; neutral; clear wavy boundary.

Bt2—17 to 28 inches; light gray (2.5Y 7/2) silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; common fine irregular pores; common distinct clay films on faces of peds and in pores; neutral; abrupt wavy boundary.

Bt3—28 to 47 inches; light gray (2.5Y 7/2) silty clay, grayish brown (2.5Y 5/2) moist; massive; hard, firm, sticky and plastic; few very fine and fine roots; common fine irregular pores; few distinct clay films on faces of varves and in pores; consolidated platy lake sediment; neutral; clear wavy boundary.

Bk—47 to 60 inches; light gray (2.5Y 7/2) silty clay, light brownish gray (2.5Y 6/2) moist; massive; hard, firm, sticky and plastic; few fine roots; common fine irregular pores; few very fine soft masses of lime; slightly effervescent; consolidated platy lake sediment; mildly alkaline.

The argillic horizon averages 35 to 45 percent clay. An apparent water table is present in January through May.

The A horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 or 3 dry or moist. It is slightly acid or neutral.

The B/E horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist.

The Bt horizon has hue of 10YR, 2.5Y, or 5Y, value of 6 to 8 dry and 3 to 6 moist, and chroma of 2 to 4 dry or moist. It is silty clay, silty clay loam, or clay loam. It is neutral or mildly alkaline.

The Bk horizon has hue of 10YR, 2.5Y or 5Y, value of 6 to 8 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is silty clay, silty clay loam, or silt loam. It is mildly alkaline or moderately alkaline.

Hudnut Series

The Hudnut series consists of very deep, well drained soils on till plains, outwash terraces, and escarpments. These soils formed in granitic ablation till and glacial outwash. Slopes are 0 to 40 percent. Elevation is 1,800 to 2,700 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Hudnut gravelly sandy loam, 0 to 20 percent slopes, about 6 miles northeast of Nespelem; 1,700 feet south and 2,200 feet east of the northwest corner of sec. 4, T. 31 N., R. 30 E., W.M.:

Oi—1.5 inches to 0; pine needles, twigs, bark, and cones.

A—0 to 2 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few medium roots; common fine irregular pores; 15 percent pebbles; neutral; clear wavy boundary.

Bw—2 to 17 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, medium, and coarse roots; common fine irregular pores; 20 percent pebbles; neutral; clear wavy boundary.

C1—17 to 50 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and common fine and medium roots; few fine tubular pores; 20 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

C2—50 to 60 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 30 percent pebbles and 10 percent cobbles; neutral.

The solum is 15 to 32 inches thick. The particle-size control section is 4 to 12 percent clay and 15 to 35 percent rock fragments. Depth to the C2 horizon is 40 to 60 inches or more. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 20 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon is 15 to 25 percent pebbles and 0 to 10 percent cobbles.

The C1 horizon has value of 6 to 8 dry and 4 to 6

moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 25 percent pebbles and 0 to 10 percent cobbles.

The C2 horizon has value of 6 to 8 dry and 4 to 6 moist, and it has chroma of 2 or 3 dry or moist. It is loamy sand or sand with 15 to 40 percent pebbles and 0 to 25 percent cobbles. This horizon is absent in some pedons.

Hunters Series

The Hunters series consists of very deep, well drained soils on terraces. These soils formed in glacial lake sediment with a component of loess and volcanic ash. Slopes are 0 to 65 percent. Elevation is 1,300 to 2,000 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Hunters silt loam, 0 to 5 percent slopes, about 10 miles north of Inchelium; 1,100 feet south and 3,200 feet east of the northwest corner of sec, 14, T. 34 N., R. 36 E., W.M.:

Oi—1.5 inches to 0; needles, twigs, and cones.

A—0 to 10 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common fine irregular pores; slightly acid; clear smooth boundary.

Bw1—10 to 15 inches; light brownish gray (2.5Y 6/2) silt loam, olive brown (2.5Y 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common fine irregular pores; neutral; clear smooth boundary.

Bw2—15 to 28 inches; light brownish gray (2.5Y 6/2) silt loam, olive brown (2.5Y 4/4) moist; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine irregular pores; neutral; clear wavy boundary.

Bk1—28 to 46 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine filaments of segregated lime; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk2—46 to 60 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common fine filaments of segregated lime; strongly effervescent; moderately alkaline.

The mollic epipedon is 10 to 20 inches thick. Depth to secondary carbonates is 20 to 34 inches. The particle-size control section is 18 to 27 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is slightly acid or neutral.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is 0 to 5 percent pebbles. It is neutral or mildly alkaline.

The Bk horizon has hue of 2.5Y or 10YR, value of 6 to 8 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is 0 to 5 percent pebbles. It is mildly alkaline or moderately alkaline.

The C horizon, where present, has hue of 5Y, 2.5Y or 10YR, value of 6 to 8 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is 0 to 5 percent pebbles. It is mildly alkaline or moderately alkaline.

Inchelium Series

The Inchelium series consists of very deep, moderately well drained soils on terraces adjacent to uplands. These soils formed in loess and glaciofluvial material over glacial lake sediment. Slopes are 0 to 10 percent. Elevation is 1,300 to 2,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Inchelium silt loam, 0 to 5 percent slopes, about 4 miles north of Inchelium; 2,350 feet south and 1,600 feet west of the northeast corner of sec. 13, T. 33 N., R. 36 E., W.M.:

A1—0 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, black (10YR 2/1) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; neutral; diffuse smooth boundary.

A2—13 to 27 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine irregular pores; neutral; gradual smooth boundary.

AB—27 to 42 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; common fine irregular pores; mildly alkaline; gradual smooth boundary.

Bw—42 to 51 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable,

slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; mildly alkaline; abrupt smooth boundary.

2Bk—51 to 60 inches; light gray (2.5Y 7/2) silt loam, light brownish gray (2.5Y 6/2) moist; massive; hard, firm, slightly sticky and slightly plastic; common fine soft segregated lime in pores; strongly effervescent; moderately alkaline.

The mollic epipedon is 20 to 42 inches thick. Depth to the 2Bk horizon is 50 to 60 inches or more. The particle-size control section is 10 to 18 percent clay. An apparent water table is present in January through June.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist.

The AB horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam or very fine sandy loam.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 4 of 5 moist, and chroma of 2 or 3 dry or moist. It is silt loam or very fine sandy loam. It is neutral or mildly alkaline.

The 2Bk horizon has hue of 2.5Y or 5Y, value of 6 or 7 dry and 5 or 6 moist, and chroma of 2 or 3 moist or dry. It is silt loam or silty clay loam. It is slightly effervescent or strongly effervescent. It is mildly alkaline or moderately alkaline.

Inkler Series

The Inkler series consists of very deep, well drained soils on backslopes, footslopes, and toeslopes of hills and mountains. These soils formed in glacial till and colluvium derived from volcanic and metamorphic rock with an admixture of volcanic ash and loess. Slopes are 5 to 65 percent. Elevation is 2,000 to 4,200 feet. The average annual precipitation is 16 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Inkler gravelly silt loam, dry, 40 to 65 percent slopes, about 22 miles northeast of Nespelem; 1,300 feet south and 2,600 feet west of the northeast corner of sec. 6, T. 34 N., R. 32 E., W.M.:

Oi—2 inches to 0; needles, twigs, and leaves.

A—0 to 3 inches; grayish brown (10YR 5/2) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium and coarse roots; few very fine irregular pores; 15 percent pebbles; slightly acid; clear wavy boundary.

Bw1—3 to 9 inches; light brownish gray (10YR 6/2) gravelly silt loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few coarse roots; common very fine irregular pores; 15 percent pebbles; slightly acid; clear wavy boundary.

2Bw2—9 to 18 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure, slightly hard, friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common very fine irregular pores; 25 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

2C1—18 to 31 inches; light brownish gray (2.5Y 6/2) very gravelly loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and medium roots; common very fine irregular pores; 40 percent pebbles and 15 percent cobbles; neutral; clear wavy boundary.

2C2—31 to 60 inches; light brownish gray (2.5Y 6/2) very gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few fine and medium roots; few very fine irregular pores; 40 percent pebbles and 10 percent cobbles; neutral.

The mantle of volcanic ash is 7 to 14 inches thick, but there may be a component of volcanic ash in the lower part of the solum. The solum is 12 to 29 inches thick. The particle-size control section is 7 to 14 percent clay and 35 to 60 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 to 3 moist. It is 15 to 35 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is silt loam, loam, or sandy loam with 10 to 25 percent pebbles and 0 to 10 percent cobbles.

The 2Bw horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 20 to 40 percent pebbles, 0 to 20 percent cobbles, and 0 to 5 percent stones. This horizon is absent in some pedons.

The 2C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 20 to 45 percent pebbles, 5 to 30 percent cobbles, and 0 to 5 percent stones.

Jimcreek Series

The Jimcreek series consists of very deep, somewhat poorly drained soils in depressions on

terraces and lake plains. These soils formed in glacial lake sediment and recent alluvium mixed with volcanic ash. Slopes are 0 to 5 percent. Elevation is 1,600 to 3,100 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Jimcreek silt loam, 0 to 5 percent slopes, about 3 miles southeast of Disautel; 1,400 feet north and 700 feet west of the southeast corner of sec. 28, T. 33 N., R. 29 E., W.M.:

Oi—1 inch to 0; leaves, needles, twigs, and branches.

A1—0 to 4 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots; common fine irregular pores; neutral; clear wavy boundary.

A2—4 to 19 inches; gray (10YR 5/1) silt loam, very dark gray (10YR 3/1) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; common fine irregular pores; neutral; clear wavy boundary.

2Btg1—19 to 36 inches; light gray (2.5Y 7/2) silty clay loam, grayish brown (2.5Y 5/2) moist; few fine faint light brownish gray (2.5Y 6/2) mottles; moderate medium angular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; few fine tubular pores; many faint clay films on faces of peds and lining pores; 2 percent fine pebbles; neutral; clear wavy boundary.

2Btg2—36 to 46 inches; light gray (2.5Y 7/2) silty clay loam, grayish brown (2.5Y 5/2) moist; common fine distinct light yellowish brown (2.5Y 6/4) mottles, light olive brown (2.5Y 5/4) moist; moderate medium angular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; many distinct clay films on faces of peds and lining pores; 2 percent pebbles; neutral; clear wavy boundary.

2Btg3—46 to 60 inches; light gray (5Y 7/2) silty clay loam, grayish brown (2.5Y 5/2) moist; common medium prominent pale brown (10YR 6/3) mottles, brown (10YR 4/3) moist, and common medium distinct gray (5Y 6/1) mottles, dark gray (5Y 4/1) moist; moderate medium angular blocky structure; very hard, firm, sticky and plastic; many distinct clay films on faces of peds and lining pores; 3 percent pebbles; neutral.

The mollic epipedon is 16 to 20 inches thick. The particle-size control section is 25 to 35 percent clay, less than 15 percent fine sand or coarser, and 0 to 3 percent rock fragments. An apparent water table is present in December through July.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist.

The 2Btg1 and 2Btg2 horizons have hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. They are silt loam or silty clay loam.

The 2Btg3 horizon has hue of 2.5Y or 5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 1 to 3 dry or moist. It is silty clay loam or silty clay.

Johntom Series

The Johntom series consists of shallow, well drained soils on ridges, shoulders, and upper backslopes of hills and mountains. These soils formed in colluvium and residuum derived from rhyodacite and quartz latite with a component of loess and volcanic ash. Slopes are 8 to 65 percent. Elevation is 1,600 to 3,500 feet. The average annual precipitation is 14 to 20 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Johntom stony loam in an area of Northstar-Johntom-Rock outcrop complex, 8 to 30 percent slopes, about 6 miles north of Nespelem; 1,700 feet east and 600 feet north of the southwest corner of sec. 19, T. 32 N., R. 31 E., W.M.:

A—0 to 4 inches; dark brown (10YR 4/3) stony loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; common fine irregular pores; 20 percent angular pebbles, 5 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

AC—4 to 11 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; common fine irregular pores; 45 percent angular pebbles and 20 percent cobbles; slightly acid; clear wavy boundary.

C—11 to 16 inches; pale brown (10YR 6/3) extremely gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common fine irregular pores; 60 percent angular

pebbles and 10 percent cobbles; slightly acid; abrupt wavy boundary.
R—16 to 20 inches; rhyodacite bedrock.

Depth to bedrock is 10 to 20 inches. The particle-size control section is 5 to 15 percent clay and 45 to 70 percent rock fragments. It is neutral or slightly acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 35 percent pebbles, 5 to 20 percent cobbles, and 0 to 10 percent stones.

The AC horizon is loam or sandy loam with 30 to 55 percent pebbles and 5 to 20 percent cobbles.

The C horizon has chroma of 2 or 3 dry or moist. It is sandy loam or coarse sandy loam with 45 to 65 percent pebbles and 5 to 20 percent cobbles.

Karamin Series

The Karamin series consists of very deep, well drained soils on terraces, terrace escarpments, and mountainsides. These soils formed in sandy glacial outwash. Slopes are 0 to 65 percent. Elevation is 2,700 to 4,500 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Karamin fine sandy loam, 0 to 20 percent slopes, about 5 miles southeast of Disautel; 600 feet west and 400 feet north of the southeast corner of sec. 34, T. 33 N., R. 29 E., W.M.:

Oi—2 inches to 1 inch; needles, leaves, and twigs.
Oe—1 inch to 0; partially decomposed forest litter.
A—0 to 6 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; common fine irregular pores; slightly acid; clear wavy boundary.
Bw—6 to 18 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; common fine tubular pores; slightly acid; clear wavy boundary.
C1—18 to 28 inches; light gray (10YR 7/2) loamy fine sand, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine tubular pores; slightly acid; gradual smooth boundary.
C2—28 to 43 inches; light gray (10YR 7/2) loamy sand, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few fine and medium roots; common fine tubular pores; neutral; gradual smooth boundary.
C3—43 to 60 inches; light gray (2.5Y 7/2) loamy sand, grayish brown (2.5Y 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; neutral.

Thickness of the solum and depth to the C horizon are 14 to 23 inches. The particle-size control section is 1 to 5 percent clay and 0 to 10 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 5 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is fine sandy loam, sandy loam, or loam with 0 to 5 percent pebbles.

The C horizon has hue of 10YR or 2.5Y, value of 6 to 8 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loamy fine sand, loamy sand, fine sand, or sand with 0 to 10 percent pebbles and 0 to 5 percent cobbles.

Kartar Series

The Kartar series consists of very deep, well drained soils on terraces and till plains. These soils formed in glacial outwash and reworked glacial till. Slopes are 0 to 10 percent. Elevation is 2,000 to 3,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Kartar sandy loam, warm, 0 to 10 percent slopes, about 6 miles northwest of Nespelem; 2,100 feet north and 1,000 feet east of the southwest corner of sec. 7, T. 31 N., R. 30 E., W.M.:

Oi—1 inch to 0; needles and twigs.
A—0 to 6 inches; pale brown (10YR 6/3) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.
Bw—6 to 18 inches; pale brown (10YR 6/3) sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable,

nonsticky and nonplastic; few very fine and fine roots; common fine irregular pores; 5 percent pebbles; neutral; abrupt wavy boundary.

BC—18 to 22 inches; very pale brown (10YR 7/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine roots; common fine tubular pores; 15 percent pebbles; neutral; clear wavy boundary.

C1—22 to 42 inches; very pale brown (10YR 7/3) gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few fine tubular pores; 25 percent pebbles; neutral; gradual wavy boundary.

C2—42 to 60 inches; light gray (10YR 7/2) fine sand, grayish brown (2.5Y 5/2) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few fine tubular pores; 5 percent pebbles; neutral.

Depth to the C horizon is 20 to 30 inches. The particle-size control section is 15 to 35 percent rock fragments.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is 5 to 10 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or fine sandy loam with 5 to 25 percent pebbles and 0 to 5 percent cobbles.

The BC horizon has value of 6 or 7 dry and 3 or 4 moist. It is sandy loam or fine sandy loam with 5 to 25 percent pebbles and 0 to 5 percent cobbles. This horizon is absent in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 5 or 6 moist, and chroma of 2 or 3 moist or dry. It is loamy sand, sand, fine sand, or coarse sand with 5 to 30 percent pebbles and 0 to 15 percent cobbles.

Kellerbutte Series

The Kellerbutte series consists of very deep, well drained soils on dominantly north-facing backslopes and footslopes of mountains. These soils formed in volcanic ash over colluvium derived from granitic rock and rhyodacite. Slopes are 20 to 65 percent. Elevation is 2,500 to 5,000 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Kellerbutte silt loam, 20 to 40 percent slopes, about 15 miles west of Inchelium; 1,800 feet north and 2,450 feet west of the southeast corner of sec. 33, T. 33 N., R. 34 E., W.M.:

Oi—1 inch to 0; needles, leaves, and twigs.

A—0 to 5 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine and medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; common fine irregular pores; 10 percent angular pebbles and 2 percent cobbles; slightly acid; gradual wavy boundary.

Bw1—5 to 12 inches; pale brown (10YR 6/3) gravelly silt loam, dark yellowish brown (10YR 3/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine irregular pores; 15 percent angular pebbles and 5 percent cobbles; slightly acid; clear wavy boundary.

Bw2—12 to 17 inches; light yellowish brown (10YR 6/4) gravelly silt loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; few fine tubular pores; 15 percent angular pebbles and 5 percent cobbles; slightly acid; clear wavy boundary.

2C1—17 to 30 inches; light gray (10YR 7/2) very gravelly coarse sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 40 percent angular pebbles and 10 percent cobbles; slightly acid; clear wavy boundary.

2C2—30 to 60 inches; light gray (10YR 7/2) very gravelly coarse sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 45 percent angular pebbles and 5 percent cobbles; slightly acid.

Thickness of the mantle of volcanic ash and depth to the 2C horizon are 15 to 26 inches. The upper part of the particle-size control section is 5 to 25 percent angular rock fragments, and the lower part is 35 to 60 percent angular rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 15 percent pebbles.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 to 7 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is loam or silt loam with 5 to 25 percent pebbles and 0 to 10 percent cobbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 6 moist, and chroma of 2 to 4 dry and 3 to 6 moist. It is loam, sandy loam, or coarse

sandy loam with 30 to 50 percent pebbles, 5 to 25 percent cobbles, and 0 to 10 percent stones.

Kenotrail Series

The Kenotrail series consists of moderately deep, well drained soils on ridges and shoulders of hills and mountains. These soils formed in residuum derived from serpentine, greenstone, and talc with an admixture of volcanic ash and loess. Slopes are 20 to 40 percent. Elevation is 3,200 to 3,800 feet. The average annual precipitation is 18 to 22 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Kenotrail silt loam, 20 to 40 percent slopes, about 13 miles northeast of Keller; 950 feet north and 300 feet east of the southwest corner of sec. 25, T. 32 N., R. 33 E., W.M.:

Oi—2 inches to 0; needles, cones, bark, and twigs.
A—0 to 4 inches; brown (10YR 5/3) silt loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; common fine irregular pores; 10 percent pebbles; neutral; clear smooth boundary.
BA—4 to 9 inches; light brown (7.5YR 6/4) silt loam, strong brown (7.5YR 4/6) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; common fine irregular pores; 10 percent pebbles; slightly acid; clear wavy boundary.
Bt1—9 to 19 inches; reddish yellow (7.5YR 6/6) gravelly silty clay loam, strong brown (7.5YR 4/6) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few faint clay films on faces of peds and in pores; common very fine and fine roots and few medium roots; few fine tubular pores; 15 percent pebbles; neutral; clear smooth boundary.
Bt2—19 to 32 inches; reddish yellow (7.5YR 6/6) gravelly silty clay loam, strong brown (7.5YR 5/6) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few faint clay films on faces of peds and in pores; common fine and few very fine roots; few fine tubular pores; 30 percent pebbles and 20 percent soft, weathered, pebble-sized talc fragments; neutral; abrupt smooth boundary.
Cr—32 to 42 inches; weathered talc bedrock.

Depth to weathered bedrock is 20 to 40 inches. The particle-size control section is 18 to 35 percent clay and 15 to 35 percent pebbles. The profile is slightly acid or neutral.

The A horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 to 5 moist, and chroma of 3 to 5 dry or moist. It is 5 to 15 percent pebbles.

The Bt horizon has hue of 7.5YR or 5YR, value of 6 or 7 dry and 4 or 5 moist, and chroma of 4 to 6 dry or moist. It is silty clay loam, loam, or clay loam with 15 to 35 percent pebbles and 15 to 30 percent soft, weathered, pebble-sized talc fragments.

Kewach Series

The Kewach series consists of very deep, moderately well drained soils on terraces and terrace escarpments. These soils formed in glacial lake sediment with a thin mantle of volcanic ash and loess. Slopes are 0 to 50 percent. Elevation is 1,300 to 2,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 43 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Kewach silt loam, 0 to 5 percent slopes, about 10 miles east of Keller; 1,550 feet south and 1,000 feet west of the northeast corner of sec. 32, T. 30 N., R. 35 E., W.M.:

Oi—2 inches to 0; twigs and bark.
A—0 to 4 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; moderate very fine and fine subangular blocky structure; soft, friable, slightly sticky and nonplastic; many very fine roots and common fine and medium roots; common fine tubular pores; neutral; clear smooth boundary.
E—4 to 10 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; moderate fine angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; common fine tubular pores; neutral; abrupt wavy boundary.
B/E—10 to 16 inches; very pale brown (10YR 7/3) silt loam (B part), yellowish brown (10YR 5/4) moist, and light gray (10YR 7/2) silt loam (E part), pale brown (10YR 6/3) moist; moderate coarse angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots, common fine roots, and few medium roots; common fine irregular pores; neutral; clear wavy boundary.
Bt/E—16 to 29 inches; pale yellow (2.5Y 7/4) silt loam (B part), light gray (2.5Y 7/2) silt loam (E part), light olive brown (2.5Y 5/4) moist (B and E parts); moderate coarse angular blocky structure; hard,

friable, sticky and plastic; many very fine roots and few fine and medium roots; common fine irregular pores; few faint clay films on faces of peds; neutral; gradual wavy boundary.

Bt—29 to 36 inches; brownish yellow (10YR 6/6) silty clay loam, dark yellowish brown (10YR 4/4) moist; moderate thick platy structure; very hard, firm, sticky and plastic; common very fine and fine roots and few medium and coarse roots; common fine irregular pores; common faint clay films on faces of peds; neutral; abrupt wavy boundary.

Btk—36 to 42 inches; light yellowish brown (2.5Y 6/4) silty clay loam, light olive brown (2.5Y 5/4) moist; moderate coarse angular blocky structure; finely laminated; very hard, very firm, sticky and plastic; few fine roots; common fine irregular pores; many faint clay films on faces of peds; few very fine soft masses of lime; slightly effervescent; neutral; clear smooth boundary.

Bk—42 to 60 inches; light gray (5Y 7/2) silty clay loam, olive (5Y 5/4) moist; laminated; hard, friable, sticky and plastic; few fine roots; common fine irregular pores; few very fine soft masses of lime; slightly effervescent; mildly alkaline.

The argillic horizon is 35 to 45 percent clay. An apparent water table is present in December through June.

The A horizon has value 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is slightly acid or neutral.

The E horizon has value of 6 or 7 dry and chroma of 2 or 3 dry or moist. It is slightly acid or neutral. This horizon is absent in some pedons.

The B/E and Bt/E horizons have value of 6 or 7 dry and 4 to 6 moist, and they have chroma of 2 to 4 dry or moist. They are silt loam or silty clay loam. They are neutral or mildly alkaline.

The Bt and Btk horizons have hue of 10YR, 2.5Y, or 5Y, value of 6 to 8 dry and 3 to 6 moist, and chroma of 2 to 4 dry or moist. They are silty clay or silty clay loam. They are neutral or mildly alkaline.

The Bk horizon has hue of 10YR, 2.5Y, or 5Y, value of 6 to 8 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is silty clay loam, silty clay, or silt loam. It is mildly alkaline or moderately alkaline.

Kiehl Series

The Kiehl series consist of very deep, well drained soils on outwash terraces, kame terraces, and terrace escarpments. These soils formed in glacial outwash with a mantle of volcanic ash and loess. Slopes are 0 to 65 percent. Elevation is 2,000 to 4,000 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Kiehl silt loam, 0 to 8 percent slopes, about 9 miles northwest of Inchelium; 1,750 feet north and 1,125 feet west of the southeast corner of sec. 19, T. 34 N., R. 36 E., W.M.:

Oi—1 inch to 0; needles, twigs, leaves, and cones.

A—0 to 2 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common fine irregular pores; 5 percent pebbles; slightly acid (NaF pH 10.5); abrupt wavy boundary.

Bw—2 to 10 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine irregular pores; 10 percent pebbles; slightly acid (NaF pH 10.5); abrupt wavy boundary.

2BC—10 to 21 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine irregular pores; 40 percent pebbles; slightly acid; clear wavy boundary.

2C1—21 to 29 inches; brown (10YR 5/3) extremely gravelly loamy coarse sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; few fine tubular pores; 50 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral; gradual wavy boundary.

2C2—29 to 60 inches; multicolored extremely gravelly coarse sand; single grain; loose; nonsticky and nonplastic; few very fine and fine roots; 60 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral.

The mantle of volcanic ash is 7 to 14 inches thick. It is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma 2 or 3 dry or moist. It is 5 to 15 percent pebbles. This horizon is absent in some pedons.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 to 7 dry and 3 to 5 moist, and chroma of 3 to 6 dry or moist. It is 5 to 15 percent pebbles.

The 2BC horizon has hue of 7.5YR or 10YR, value of 5 to 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry

or moist. It is 20 to 40 percent pebbles and 0 to 5 percent cobbles. This horizon is absent in some pedons.

The 2C horizon has hue of 2.5Y or 10YR, value of 5 to 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is loamy sand, coarse sand, loamy coarse sand, or coarse sand with 35 to 60 percent pebbles, 10 to 20 percent cobbles, and 0 to 5 percent stones.

Koepke Series

The Koepke series consists of soils that are deep to dense glacial till and are well drained. These soils are on footslopes and backslopes of hills and mountains. They formed in glacial till with a mantle of volcanic ash and loess. Slopes are 15 to 30 percent. Elevation is 2,200 to 4,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Koepke loam, 15 to 30 percent slopes, about 8 miles northeast of Disautel; 1,500 feet north and 2,400 east of the southwest corner of sec. 11, T. 34 N., R. 29 E., W.M.:

Oi—1 inch to 0; needles, twigs, and cones.

A1—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine irregular pores; 10 percent pebbles; neutral; clear wavy boundary.

A2—3 to 22 inches; dark brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine, fine, and medium roots and common coarse roots; common very fine irregular pores; 10 percent pebbles; slightly acid; gradual wavy boundary.

2Bw—22 to 40 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots and few coarse roots; common very fine irregular pores; 25 percent pebbles and 5 percent cobbles; neutral; gradual wavy boundary.

2Cd—40 to 60 inches; yellowish brown (10YR 5/4) dense glacial till that crushes to very cobbly sandy loam, brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and nonplastic; few very fine, fine, and medium roots; few very fine irregular pores; 30 percent pebbles and 15 percent cobbles; neutral.

Depth to dense glacial till is 40 to 60 inches. The mollic epipedon is 20 to 30 inches thick. The upper part of the 2Bw horizon is part of the mollic epipedon in some pedons. Thickness of the solum is 30 to 45 inches. The lower part of the particle-size control section is 8 to 18 percent clay and 15 to 35 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The 2Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry and 2 or 3 moist. It is sandy loam or loam with 15 to 30 percent pebbles and 0 to 5 percent cobbles.

The 2Cd horizon has value of 5 to 7 dry and 4 to 6 moist, and it has chroma of 3 or 4 dry and 2 or 3 moist. It is 25 to 50 percent pebbles and 5 to 25 percent cobbles.

Lakesol Series

The Lakesol series consists of very deep, well drained soils on north-facing terrace escarpments. These soils formed in glacial lake sediment with a component of loess in the upper part. Slopes are 30 to 65 percent. Elevation is 1,400 to 2,200 feet. The average annual precipitation is 18 to 20 inches, the average annual air temperature is 43 to 45 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Lakesol silt loam, 30 to 65 percent north slopes, about 4 miles south of Inchelium; 800 feet south and 2,400 feet west of the northeast corner of sec. 31, T. 31 N., R. 37 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure and weak fine granular; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots and few medium roots; common fine irregular pores; neutral; clear wavy boundary.

A2—2 to 10 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots and common medium roots; common fine irregular pores; neutral; clear wavy boundary.

Bw1—10 to 23 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; many very fine roots

and common fine and medium roots; common fine irregular pores; less than 5 percent pebbles; neutral; gradual wavy boundary.

Bw2—23 to 37 inches; light yellowish brown (10YR 6/4) silt loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; many very fine roots, common fine and medium roots, and few coarse roots; common fine irregular pores; mildly alkaline; abrupt wavy boundary.

C—37 to 60 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; few fine tubular pores; slightly effervescent; mildly alkaline.

The mollic epipedon is 9 to 12 inches thick. The particle-size control section is 10 to 18 percent clay.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist.

The Bw horizon has value of 6 or 7 dry and chroma of 2 or 3 dry or moist. It is neutral or mildly alkaline.

The C horizon has hue of 2.5Y or 10YR, value of 6 or 7 dry and 5 or 6 moist, and chroma of 2 to 4 dry or moist. It is neutral or mildly alkaline.

Leahy Series

The Leahy series consists of very deep, moderately well drained soils on undulating lake terraces. These soils formed in glacial lake sediment. Slopes are 0 to 15 percent. Elevation is 1,100 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Leahy silt loam in an area of Elvedere-Leahy silt loams complex, 0 to 15 percent slopes, about 5 miles northwest of EImer City; 1,200 feet north and 1,900 feet east of the southwest corner of sec. 25, T. 30 N., R. 30 E., W.M.:

Ez—0 to 3 inches; light gray (2.5Y 7/2) silt loam, grayish brown (2.5Y 5/2) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, fine, and medium roots; few fine tubular pores; violently effervescent; strongly alkaline; abrupt smooth boundary.

Btnz—3 to 10 inches; 70 percent brown (10YR 5/3) and 30 percent light gray (10YR 7/2) silty clay, 70 percent dark brown (10YR 3/3) and 30 percent brown (10YR 5/3) moist; weak coarse prismatic structure parting to moderate coarse subangular blocky; hard, friable, sticky and plastic; common very fine, fine, and medium roots; few fine tubular pores; common distinct clay films on faces of peds; violently effervescent; very strongly alkaline; clear smooth boundary.

Bknz—10 to 16 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; common very fine, fine, and medium roots; few fine tubular pores; common fine soft masses and filaments of lime on faces of peds; violently effervescent; very strongly alkaline; abrupt smooth boundary.

Cknz1—16 to 28 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; massive (varved); hard, firm, sticky and plastic; few very fine, fine, and medium roots; few fine tubular pores; few soft masses of lime between varves; violently effervescent; very strongly alkaline; clear smooth boundary.

Cknz2—28 to 60 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; massive (varved); hard, firm, sticky and plastic; few very fine roots; few fine tubular pores; few soft masses of lime between varves; strongly effervescent; very strongly alkaline.

The natric horizon is 5 to 10 inches thick and 35 to 55 percent clay. The sodium adsorption ratio is 15 to 30 throughout the profile. An apparent water table is present in February through April. These soils are slightly saline in the upper 3 inches and moderately saline or strongly saline below a depth of 3 inches.

The Ez horizon has hue of 10YR or 2.5Y and value of 6 or 7 dry and 4 or 5 moist.

The Btnz horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 or 3 dry or moist. It is silty clay loam or silty clay.

The Bknz and Cknz horizons have hue of 10YR or 2.5Y, value of 6 to 8 dry and 5 or 6 moist, and chroma of 2 or 3 dry or moist. They are silty clay loam or silty clay.

Lithic Xerorthents

Lithic Xerorthents consist of very shallow, well drained soils on summits, shoulders, and backslopes of glacially scoured hills and mountains. These soils formed in colluvium and residuum derived from rhyodacite and quartz latite with some glacial till and a component of volcanic ash and loess. Slopes are 8 to 70 percent. Elevation is 2,500 to 4,200 feet. The average annual precipitation is 15 to 20 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Reference pedon of Lithic Xerorthents in an area of Lithic Xerorthents-Baldknob-Rock outcrop complex,

8 to 40 percent slopes, about 20 miles northeast of Nespelem; 1,300 feet west and 1,100 feet north of the southeast corner of sec. 13, T. 34 N., R. 32 E., W.M.:

A—0 to 2 inches; yellowish brown (10YR 5/4) gravelly loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and few fine roots; common fine irregular pores; 20 percent pebbles; slightly acid; clear wavy boundary.
Bw—2 to 7 inches; yellowish brown (10YR 5/6) gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine roots; few fine tubular pores; 25 percent pebbles; neutral; abrupt wavy boundary.
R—7 to 11 inches; rhyodacite bedrock.

Depth to bedrock is 4 to 10 inches. The particle-size control section is 8 to 18 percent clay and 15 to 60 percent rock fragments. It is slightly acid or neutral.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5 dry, and chroma of 3 or 4 dry or moist. It is 15 to 40 percent pebbles, 0 to 20 percent cobbles, and 0 to 10 percent stones.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry, and chroma of 4 to 6 dry. It is 20 to 50 percent pebbles, 0 to 25 percent cobbles, and 0 to 15 percent stones.

Logy Series

The Logy series consists of very deep, somewhat excessively drained soils on alluvial fans. These soils formed in recent alluvium. Slopes are 3 to 25 percent. Elevation is 800 to 1,600 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Logy very stony sandy loam, 3 to 25 percent slopes, about 5 miles southwest of Okanogan; 2,300 feet east and 1,500 feet south of the northwest corner of sec. 1, T. 32 N., R. 25 E., W.M.:

A—0 to 10 inches; grayish brown (10YR 5/2) very stony sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many fine roots; few fine and very fine interstitial pores; 20 percent pebbles, 10 percent cobbles, and 5 percent stones; mildly alkaline; gradual wavy boundary.
Bw—10 to 24 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; few fine interstitial pores; 50 percent pebbles and 5 percent cobbles; mildly alkaline; gradual wavy boundary.
C—24 to 60 inches; brown (10YR 5/3) very gravelly loamy sand, dark brown (10YR 3/3) moist; single grain; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 30 percent pebbles and 15 percent cobbles; moderately alkaline.

The mollic epipedon is 7 to 12 inches thick. The particle-size control section is 35 to 60 percent rock fragments. Depth to the C horizon is 20 to 40 inches.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry. It is 5 to 15 percent stones, 10 to 20 percent cobbles, and 15 to 30 percent pebbles. It is neutral or mildly alkaline.

The Bw horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 1 to 3 dry and 2 or 3 moist. It is 5 to 15 percent cobbles and 45 to 60 percent pebbles. It is neutral or mildly alkaline.

The C horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is loamy sand or sand with 5 to 25 percent cobbles and 35 to 65 percent pebbles. It is mildly alkaline or moderately alkaline.

Loony Series

The Loony series consists of soils that are moderately deep to dense glacial till and are moderately well drained. These soils are on till plains and toeslopes of mountains. They formed in volcanic ash over glacial till. Slopes are 0 to 15 percent. Elevation is 2,500 to 4,000 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Loony loam, 0 to 15 percent slopes, about 7 miles northeast of Disautel; 200 feet north and 1,300 feet east of the southwest corner of sec. 31, T. 34 N., R. 30 E., W.M.:

Oi—1 inch to 0; needles, twigs, and cones.
A—0 to 3 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots, common medium roots, and few coarse roots; common fine irregular pores; slightly acid; clear wavy boundary.
Bw1—3 to 8 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak fine subangular

blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; common fine tubular pores; slightly acid; gradual wavy boundary.

Bw2—8 to 17 inches; light yellowish brown (10YR 6/4) loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots and common fine, medium, and coarse roots; common fine irregular pores; slightly acid; gradual wavy boundary.

2CB—17 to 28 inches; light gray (10YR 7/2) cobbly sandy loam, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few very fine, fine, and coarse roots and common medium roots; few fine tubular pores; 10 percent pebbles and 10 percent cobbles; neutral; gradual wavy boundary.

2Cd1—28 to 43 inches; white (10YR 8/2) dense glacial till that crushes to sandy loam, yellowish brown (10YR 5/4) moist, massive; hard, firm, nonsticky and nonplastic; 5 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

2Cd2—43 to 50 inches; light gray (2.5Y 7/2) dense glacial till that crushes to loam, light brownish gray (2.5Y 6/2) moist; massive; very hard, very firm, slightly sticky and slightly plastic; 5 percent pebbles; neutral; clear wavy boundary.

2Cd3—50 to 60 inches; light gray (2.5Y 7/2) dense glacial till that crushes to loam, grayish brown (2.5Y 5/2) moist; massive; very hard, very firm, slightly sticky and slightly plastic; neutral.

The mantle of volcanic ash is 14 to 20 inches thick. Depth to dense glacial till is 20 to 40 inches. The particle-size control section is 5 to 25 percent rock fragments. An apparent water table is present in February through May.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles.

The 2CB horizon is 5 to 15 percent cobbles and 10 to 25 percent pebbles.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 7 or 8 dry and 5 or 6 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with lenses of loamy sand or sand. It is 0 to 15 percent pebbles and 0 to 5 percent cobbles.

Lostcreek Series

The Lostcreek series consists of very deep, moderately well drained soils on alluvial fans, terraces, and toeslopes of hills and mountains. These soils formed in alluvium and glacial till with a component of loess and volcanic ash. Slopes are 3 to 15 percent. Elevation is 2,000 to 3,500 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Lostcreek loam, 3 to 15 percent slopes, about 4.5 miles northwest of Nespelem; 600 feet north and 500 feet west of the southeast corner of sec. 8, T. 31 N., R. 30 E., W.M.:

Oi—0.5 inch to 0; needles, twigs, leaves, and bark.

A—0 to 11 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common fine irregular pores; 2 percent pebbles; slightly acid; clear wavy boundary.

Bw1—11 to 20 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and coarse roots and few medium roots; common fine irregular pores; 3 percent pebbles; neutral; clear wavy boundary.

Bw2—20 to 27 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots and few medium and coarse roots; few fine tubular pores; 5 percent pebbles; neutral; clear wavy boundary.

C1—27 to 42 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine and medium roots and few coarse roots; few fine tubular pores; 10 percent pebbles; neutral; clear wavy boundary.

C2—42 to 60 inches; light gray (10YR 7/2) fine sandy loam, pale brown (10YR 6/3) moist; common fine distinct light yellowish brown (10YR 6/4) mottles, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine and coarse roots; few fine tubular pores; 10 percent pebbles; neutral.

The mollic epipedon is 10 to 20 inches thick. Thickness of the solum is 20 to 35 inches. The particle-size control section is 7 to 15 percent clay and 5 to 25 percent rock fragments. The profile is slightly acid or neutral. An apparent water table is present in February through June.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is 0 to 15 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is loam, sandy loam, or fine sandy loam with 0 to 20 percent pebbles and 0 to 2 percent cobbles.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is loam, sandy loam, or fine sandy loam with 10 to 25 percent pebbles and 0 to 5 percent cobbles.

Louiecreek Series

The Louiecreek series consists of very deep, well drained soils on backslopes, footslopes, and toeslopes of hills and mountains. These soils formed in colluvium derived from rhyodacite and quartz latite with a component of loess and volcanic ash. Slopes are 3 to 65 percent. Elevation is 1,600 to 3,800 feet. The average annual precipitation is 15 to 20 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Louiecreek gravelly loam in an area of Northstar-Louiecreek-Rock outcrop complex, 40 to 65 percent slopes, about 12 miles north of Nespelem; 800 feet north and 250 feet west of the southeast corner of sec. 29, T. 33 N., R. 31 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.

A—0 to 13 inches; dark brown (10YR 4/3) gravelly loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; common fine irregular pores; 15 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

Bw1—13 to 20 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, slightly sticky and nonplastic; many very fine roots and common fine and medium roots; common fine irregular pores; 25 percent pebbles and 5 percent cobbles; slightly acid; clear wavy boundary.

Bw2—20 to 32 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine roots, common fine and medium roots, and few coarse roots; few fine tubular pores; 35 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

C—32 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; few fine tubular pores; 40 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral.

The mollic epipedon is 7 to 15 inches thick. The particle-size control section is 35 to 50 percent rock fragments and 8 to 15 percent clay. The profile is neutral or slightly acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 30 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. Chroma is 4 in areas where value is 3 when moist. The horizon is loam or sandy loam with 25 to 55 percent pebbles, 5 to 35 percent cobbles, and 0 to 5 percent stones.

The C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam with 40 to 60 percent pebbles, 10 to 40 percent cobbles, and 0 to 5 percent stones.

Louploup Series

The Louploup series consists of soils that are deep to dense glacial till and are well drained. These soils are on till plains and on footslopes and toeslopes of mountains. They formed in a mantle of volcanic ash over glacial till. Slopes are 0 to 40 percent. Elevation is 2,000 to 4,500 feet. The average annual precipitation is 17 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Louploup silt loam, 0 to 20 percent slopes, about 4.5 miles southeast of Disautel; 400 feet east and 1,500 feet north of the southwest corner of sec. 34, T. 33 N., R. 29 E., W.M.:

Oi—3 inches to 1 inch; needles, leaves, and twigs.

Oe—1 inch to 0; partially decomposed forest litter.

A—0 to 6 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots;

common fine irregular pores; slightly acid; clear wavy boundary.
Bw—6 to 22 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine, medium, and coarse roots; common fine irregular pores; 5 percent pebbles; slightly acid; clear wavy boundary.
2CB—22 to 46 inches; light gray (10YR 7/2) sandy loam, brown (10YR 5/3) moist; massive; hard, friable, nonsticky and nonplastic; common fine and medium roots; common fine irregular pores; 10 percent pebbles; neutral; gradual wavy boundary.
2Cd—46 to 60 inches; light gray (2.5Y 7/2) dense glacial till that crushes to gravelly sandy loam, grayish brown (2.5Y 5/2) moist; massive; hard, friable, nonsticky and nonplastic; 15 percent pebbles; neutral.

Depth to dense glacial till is 40 to 60 inches. The mantle of volcanic ash is 15 to 28 inches thick. The upper part of the particle-size control section is 0 to 10 percent rock fragments, and the lower part is 4 to 10 percent clay and 10 to 35 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 6 or 7 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam, fine sandy loam, or silt loam with 0 to 15 percent pebbles.

The 2CB horizon, where present, has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is fine sandy loam, sandy loam, or coarse sandy loam with 5 to 25 percent pebbles and 0 to 5 percent cobbles.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 5 to 8 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is sandy loam, coarse sandy loam, or loamy sand with 15 to 35 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones.

Lynxcreek Series

The Lynxcreek series consists of very deep, moderately well drained soils on terraces in narrow mountain valleys. These soils formed in glacial lake sediment with a mantle of volcanic ash. Slopes are 20 to 40 percent. Elevation is 3,300 to 4,200 feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 39 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Lynxcreek silt loam, 20 to 40 percent slopes, about 16 miles northwest of Inchelium; 2,000 feet east and 1,000 feet south of the northwest corner of sec. 2, T. 33 N., R. 34 E., W.M.:

Oi—3 inches to 0; needles, leaves, and twigs.
A—0 to 9 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium granular structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; few fine tubular pores; slightly acid; abrupt smooth boundary.
2E—9 to 10 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; few fine tubular pores; neutral; clear broken boundary.
2Bt1—10 to 16 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; few faint clay films on faces of peds and in pores; 5 percent pebbles and cobbles; neutral; clear wavy boundary.
2Bt2—16 to 28 inches; very pale brown (10YR 7/3) silty clay loam, pale brown (10YR 6/3) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; few faint clay films on faces of peds and in pores; 10 percent pebbles and cobbles; neutral; clear wavy boundary.
2Bt3—28 to 36 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; few faint clay films on faces of peds and in pores; neutral; clear wavy boundary.
2C—36 to 60 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; laminated; hard, firm, sticky and plastic; matted roots between laminations; neutral.

The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 5 to 15 percent rock fragments and 18 to 35 percent clay. The profile is slightly acid or neutral. An apparent water table is present in February through May.

The A horizon has hue of 7.5YR or 10YR, value of 5 to 7 dry and 3 to 5 moist, and chroma of 3 to 6 dry or moist. It is 0 to 5 percent pebbles.

The 2Bt horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 5 or 6 moist, and chroma of 2 or 3 dry and 3 or 4 moist. It is silt loam or silty clay loam with 0 to 10 percent pebbles and 0 to 5 percent cobbles. Distinct or prominent mottles are present in some pedons.

The 2C horizon has hue of 10YR or 2.5Y, value of 7 or 8 dry and 5 or 6 moist, and chroma of 2 or 3 dry and 3 or 4 moist. It is silty clay loam, loam, or silt loam with 0 to 15 percent pebbles and 0 to 5 percent cobbles.

Malott Series

The Malott series consists of soils that are deep to a duripan and are well drained (fig. 21). These soils are on till plains and hills. They formed in glacial till with a mantle of loess. Slopes are 0 to 70 percent. Elevation is 800 to 2,000 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Malott very fine sandy loam, 0 to 5 percent slopes, about 3.5 miles south of Okanogan; 1,575 feet west and 1,500 feet south of the northeast corner of sec. 6, T. 32 N., R. 26 E., W.M.:

A1—0 to 4 inches; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, friable, nonsticky and slightly plastic; many very fine and fine roots; common fine irregular and tubular pores; neutral; gradual smooth boundary.

A2—4 to 12 inches; brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) moist; weak medium granular structure; slightly hard, friable, nonsticky and slightly plastic; many very fine and fine roots; common fine irregular and tubular pores; neutral; clear smooth boundary.

Bw1—12 to 24 inches; yellowish brown (10YR 5/4) very fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; common very fine and fine roots; common fine irregular and tubular pores; mildly alkaline; gradual smooth boundary.

Bw2—24 to 36 inches; yellowish brown (10YR 5/4) very fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; common very fine and fine roots;

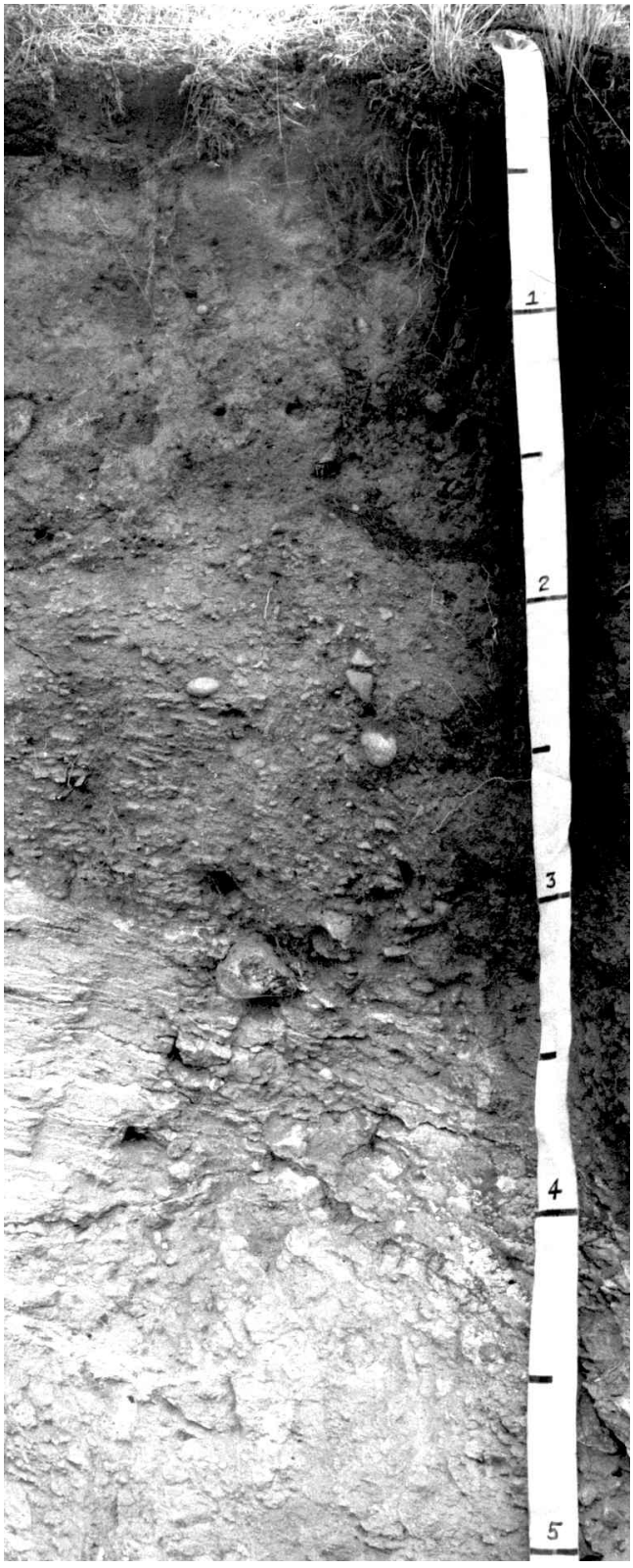


Figure 21.—Typical pedon of a Malott soil that has a continuous lime- and silica-cemented duripan below a depth of 40 inches. (Numbers on tape represent feet.)

common fine irregular and tubular pores; mildly alkaline; clear wavy boundary.

2Bk—36 to 49 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few very fine and fine roots; few very fine and fine irregular pores; 25 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline; abrupt wavy boundary.

2Bkqm—49 to 60 inches; white (10YR 8/2) weakly lime- and silica-cemented duripan that crushes to gravelly sandy loam, light brownish gray (10YR 6/2) moist; massive; hard, firm, nonsticky and slightly plastic; few very fine and fine irregular pores; 20 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline.

Depth to the duripan is 40 to 60 inches. The mollic epipedon is 10 to 15 inches thick. Depth to secondary carbonates is 23 to 43 inches. The particle-size control section is 5 to 30 percent rock fragments.

The A horizon has value of 4 or 5 dry and chroma of 1 to 3 dry and 2 or 3 moist. It is very fine sandy loam or stony very fine sandy loam with 0 to 10 percent pebbles, 0 to 5 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry and 2 to 4 moist. It is very fine sandy loam, fine sandy loam, or loam with 0 to 20 percent pebbles and 0 to 10 percent cobbles.

The 2Bk horizon has value of 6 or 7 dry and 4 to 6 moist, and it has chroma of 1 to 3 dry or moist. It is loam or sandy loam with 10 to 25 percent pebbles, 5 to 20 percent cobbles, and 0 to 5 percent stones. It is mildly alkaline or moderately alkaline.

The 2Bkqm horizon has value of 6 to 8 dry and 5 or 6 moist, and it has chroma of 1 to 3 dry and 2 or 3 moist. It is moderately alkaline or strongly alkaline.

Manley Series

The Manley series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on toeslopes, footslopes, and backslopes of mountains. They formed in glacial till with a mantle of volcanic ash. Slopes are 5 to 65 percent. Elevation is 3,000 to 6,000 feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 38 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Manley silt loam, dry, 5 to 20 percent slopes, about 17 miles north of Nespelem; 700 feet north and 2,200 feet west of the southeast corner of sec. 30, T. 34 N., R. 31 E., W.M.:

Oi—3 inches to 1 inch; needles, twigs, leaves, and bark.

Oe—1 inch to 0; decomposed organic matter.

A—0 to 1 inch; pale brown (10YR 6/3) silt loam, dark yellowish brown (10YR 3/4) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; many very fine irregular pores; medium acid (NaF pH 10.5); abrupt smooth boundary.

Bw1—1 inch to 12 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 5 percent pebbles; slightly acid (NaF pH 10.5); clear wavy boundary.

Bw2—12 to 17 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common very fine tubular pores; 10 percent pebbles; slightly acid (NaF pH 10.5); abrupt wavy boundary.

2BC—17 to 27 inches; light gray (10YR 7/2) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; common medium very pale brown (10YR 7/4) patches of volcanic ash, yellowish brown (10YR 5/6) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine irregular pores; 40 percent pebbles and 5 percent cobbles; medium acid (NaF pH 9.9); clear wavy boundary.

2CB—27 to 38 inches; very pale brown (10YR 7/3) extremely gravelly coarse sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; many very fine irregular pores; 60 percent pebbles and 5 percent cobbles; medium acid; clear smooth boundary.

2Cd—38 to 60 inches; light gray (2.5Y 7/2) dense glacial till that crushes to very gravelly loamy coarse sand, light brownish gray (2.5Y 5/2) moist; massive; very hard, firm, nonsticky and nonplastic; 50 percent pebbles and 5 percent cobbles.

Depth to dense glacial till is 20 to 40 inches. The mantle of volcanic ash is 14 to 22 inches thick. The lower part of the particle-size control section is 35 to 60 percent rock fragments. It is medium acid to neutral.

The A horizon has value of 6 to 8 dry and 3 to 6 moist, and it has chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 to 7 dry and 3 or 4 dry or moist, and chroma of 3 to 6 dry or moist. It is loam, silt loam, or fine sandy loam with 0 to 20 percent pebbles and 0 to 5 percent cobbles.

The 2BC and 2CB horizons have hue of 10YR or 2.5Y, value of 5 to 7 dry and 5 or 6 moist, and chroma of 2 to 4 dry or moist. They are sandy loam or coarse sandy loam with 30 to 60 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones. The 2BC horizon has volcanic ash in pores and root channels. These horizons are absent in some pedons.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is coarse sandy loam, loamy sand, or loamy coarse sand with 20 to 60 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones.

Martella Series

The Martella series consists of very deep, moderately well drained soils on terraces and terrace escarpments. These soils formed in glacial lake sediment with a mantle of volcanic ash and loess. Slopes are 0 to 30 percent. Elevation is 2,000 to 3,600 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Martella silt loam, 0 to 8 percent slopes, about 8 miles southwest of Inchelium; 1,050 feet north and 500 feet west of the southeast corner of sec. 25, T. 32 N., R. 35 E., W.M.:

Oi—1 inch to 0; needles and twigs.

A—0 to 3 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common fine irregular pores; slightly acid (NaF pH 10.6); clear smooth boundary.

Bw—3 to 12 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine irregular pores; neutral (NaF pH 10.1); abrupt wavy boundary.

2E—12 to 15 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common fine irregular pores; neutral; clear wavy boundary.

2BE—15 to 23 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common very fine and fine roots and few medium roots; few fine tubular pores; few thin clay films lining pores; neutral; gradual wavy boundary.

2Bt1—23 to 33 inches; brown and pale brown (10YR 5/3 and 6/3) silt loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common very fine and fine roots; few fine tubular pores; common distinct clay films lining pores and on faces of peds; neutral; gradual wavy boundary.

2Bt2—33 to 46 inches; pale brown (10YR 6/3) silt loam, dark grayish brown (2.5Y 4/2) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; few fine tubular pores; common distinct clay films lining pores and on faces of peds; neutral; clear wavy boundary.

2BCt—46 to 53 inches; pale olive (5Y 6/3) silt loam, olive (5Y 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine and fine roots; few fine tubular pores; few distinct clay films lining pores; neutral; abrupt wavy boundary.

2C—53 to 60 inches; pale olive (5Y 6/3) silty clay loam, olive (5Y 4/3) moist; massive; slightly hard, friable, sticky and plastic; few very fine and fine roots; few fine tubular pores; neutral.

The mantle of volcanic ash is 7 to 14 inches thick. The argillic horizon has 18 to 35 percent clay, less than 15 percent fine sand or coarser, and 0 to 5 percent rock fragments. An apparent water table is present in December through June.

The A horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. A thin layer of Mt. St. Helens “T” or “W” volcanic ash is present in some pedons. This horizon has chroma of 1 or 2 dry or moist.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is silt loam, loam, or very fine sandy loam. It is slightly acid or neutral. This horizon is absent in some pedons.

The 2E and 2BE horizons have hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. They are silt loam, loam, or very fine sandy loam. They are slightly acid or neutral. These horizons are absent in some pedons.

The 2Bt horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 6 moist, and chroma of 2 to 4 dry or moist. It is very fine sandy loam, silt loam, or silty clay loam. It is slightly acid to mildly alkaline.

The 2BCt horizon has hue of 10YR, 2.5Y, or 5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is stratified very fine sandy loam to silty clay loam. It is neutral or mildly alkaline. This horizon is absent in some pedons.

The 2C horizon has hue of 10YR, 2.5Y, or 5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is stratified very fine sandy loam to silty clay loam. It is neutral or mildly alkaline.

Medisaprists

Medisaprists consist of very deep, very poorly drained soils in backswamps of floods plains and in depressions on till plains, ground moraines, and terraces. These soils formed in decomposed organic material that in places overlies alluvium, glacial outwash, or glacial lake sediment. Elevation is 1,700 to 2,800 feet. Slopes are 0 to 2 percent. The average annual precipitation is 12 to 18 inches, the average annual air temperature is 45 to 49 degrees F, and the frost-free period is 100 to 150 days.

Reference pedon of Medisaprists, 0 to 2 percent slopes, about 4.5 miles northeast of Elmer City; 1,800 feet south and 900 feet east of the northwest corner of sec. 33, T. 30 N., R. 31 E., W.M.:

Oi—2 inches to 0; leaves, grasses, and twigs.
Oa1—0 to 10 inches; dark gray (10YR 4/1) muck, black (10YR 2/1) moist; weak medium granular structure; slightly hard, very friable, slightly sticky and nonplastic; 20 percent fiber, 10 percent rubbed; many very fine and fine roots and common medium roots; common fine irregular pores; slightly acid; clear wavy boundary.
Oa2—10 to 36 inches; dark gray (10YR 4/1) muck, black (10YR 2/1) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; 15 percent fiber, 5 percent rubbed; common very fine, fine, and medium roots; common fine irregular pores; neutral; gradual wavy boundary.
Oa3—36 to 60 inches; gray (10YR 5/1) muck, very dark gray (10YR 3/1) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; 10 percent fiber, less than 5 percent rubbed; few very fine and fine roots; few fine tubular pores; neutral.

Depth to mineral soil material is 16 to 60 inches or more. The profile is slightly acid or neutral. An apparent water table is present throughout the year. Occasional periods of flooding occur in February through April.

The Oa horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist.

A and C mineral horizons are present in some pedons. They are silt loam to coarse sand with 0 to 60 percent rock fragments.

Merkel Series

The Merkel series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on summits, toeslopes, footslopes, and backslopes of hills and mountains. They formed in granitic glacial till with loess and volcanic ash in the upper part. Slopes are 5 to 65 percent. Elevation is 2,600 to 5,200 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Merkel sandy loam, 40 to 65 percent slopes, about 15 miles northeast of Disautel; 400 feet north and 1,100 feet west of the southeast corner of sec. 6, T. 34 N., R. 31 E., W.M.:

Oi—1 inch to 0; needles, twigs, and bark.
A—0 to 6 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine irregular pores; 10 percent pebbles; medium acid (NaF pH 9.8); clear wavy boundary.
Bw1—6 to 12 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine irregular pores; 20 percent pebbles; medium acid (NaF pH 10.1); gradual wavy boundary.
Bw2—12 to 29 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots; common fine irregular pores; 25 percent pebbles, 5 percent cobbles, and 2 percent stones; medium acid (NaF pH 10.1); clear wavy boundary.
2BC—29 to 35 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few fine tubular pores;

40 percent pebbles, 5 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.
2Cd—35 to 60 inches; pale brown (10YR 6/3) dense glacial till that crushes to very gravelly coarse sandy loam, brown (10YR 5/3) moist; massive; hard, friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 35 percent pebbles, 15 percent cobbles, and 5 percent stones; slightly acid.

Depth to dense glacial till is 20 to 40 inches. Thickness of the mantle of volcanic ash is 7 to 30 inches. The particle-size control section is 35 to 60 percent subangular rock fragments. The profile is medium acid to neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is sandy loam or bouldery fine sandy loam with 10 to 20 percent pebbles, 0 to 5 percent cobbles, and 0 to 5 percent stones and boulders.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is fine sandy loam or sandy loam with 10 to 25 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones.

The 2Cd horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is sandy loam, loamy coarse sand, or coarse sandy loam with 20 to 40 percent pebbles, 15 to 25 percent cobbles, and 0 to 5 percent stones.

Mineral Series

The Mineral series consists of moderately deep, well drained soils on ridges, shoulders, and backslopes of mountains. These soils formed in colluvium and glacial till derived from granitic rock with loess and volcanic ash in the upper part. Slopes are 5 to 65 percent. Elevation is 2,000 to 5,300 feet. The average annual precipitation is 17 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 110 days.

Typical pedon of Mineral stony loam in an area of Mineral-Rock outcrop complex, 20 to 40 percent slopes, about 5 miles northeast of Disautel; 550 feet north and 100 feet west of the southeast corner of sec. 34, T. 34 N., R. 29 E., W.M.:

Oi—1 inch to 0; needles, twigs, bark, and leaves.
A—0 to 6 inches; grayish brown (10YR 5/2) stony loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; common fine irregular pores; common very fine irregular pores; 20 percent pebbles and 5 percent cobbles and stones; neutral; clear wavy boundary.
Bw—6 to 12 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; few fine tubular pores; common very fine irregular pores; 30 percent pebbles and 10 percent cobbles; neutral; gradual wavy boundary.
C—12 to 23 inches; very pale brown (10YR 7/3) very stony sandy loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and nonplastic; common very fine and fine roots and few medium roots; few fine tubular pores; common very fine irregular pores; 30 percent pebbles, 10 percent cobbles, and 10 percent stones; neutral; abrupt wavy boundary.
R—23 to 33 inches; granitic bedrock.

Depth to bedrock is 20 to 40 inches. The particle-size control section is 7 to 12 percent clay and 40 to 65 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 35 percent pebbles, 2 to 5 percent cobbles, and 2 to 5 percent stones. It is medium acid to neutral.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam, sandy loam, or coarse sandy loam with 20 to 45 percent pebbles, 0 to 30 percent cobbles, and 0 to 5 percent stones. It is medium acid to neutral.

The C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is sandy loam or loam with 15 to 35 percent pebbles, 10 to 20 percent cobbles, and 0 to 15 percent stones. It is slightly acid or neutral. This horizon is absent in some pedons.

Mitchellpoint Series

The Mitchellpoint series consists of very deep, well drained soils on outwash terraces. These soils formed in glaciofluvial deposits over glacial outwash with a mantle of volcanic ash and loess. Slopes are 0 to 5 percent. Elevation is 1,800 to 2,100 feet. The average annual precipitation is 17 to 19 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Mitchellpoint silt loam, 0 to 5 percent slopes, about 16 miles east of Keller; 1,750 feet north and 300 feet east of the southwest corner of sec. 30, T. 30 N., R. 36 E., W.M.:

Oi—3 inches to 0; needles, grass, and twigs.
A—0 to 7 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine roots and common fine and medium roots; common fine irregular pores; slightly acid; abrupt smooth boundary.
Bw—7 to 14 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine roots and common fine and medium roots; few fine tubular pores; slightly acid; clear smooth boundary.
2B/E—14 to 20 inches; light yellowish brown (10YR 6/4) silt loam (B part), dark yellowish brown (10YR 4/4) moist, and very pale brown (10YR 7/4) silt loam (E part), yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; few fine tubular pores; slightly acid; clear wavy boundary.
2Bt—20 to 26 inches; very pale brown (10YR 7/3) cobbly silt loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; few fine tubular pores; common faint dark yellowish brown (10YR 4/4, moist) clay films on faces of peds and lining pores; 5 percent pebbles and 10 percent cobbles; slightly acid; clear smooth boundary.
3C1—26 to 36 inches; multicolored very cobbly loamy coarse sand; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; few fine tubular pores; 30 percent pebbles, 15 percent cobbles, and 5 percent stones; neutral; clear smooth boundary.
3C2—36 to 60 inches; multicolored very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 55 percent pebbles; neutral.

The mantle of volcanic ash is 14 to 20 inches thick. The solum is 23 to 35 inches thick. The solum and the upper part of the particle-size control section are 18 to 27 percent clay, and the substratum and lower part of the particle-size control section are 35 to 60 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is 0 to 10 percent pebbles.

The 2B/E horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam, loam, or silt loam with 0 to 20 percent pebbles and 0 to 5 percent cobbles.

A 2E/B horizon is present in some pedons.

The 2Bt horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam with 5 to 15 percent pebbles and 0 to 15 percent cobbles.

The 3C horizon is multicolored, stratified loamy coarse sand and coarse sand with 30 to 55 percent pebbles, 5 to 20 percent cobbles, and 0 to 5 percent stones.

Monse Series

The Monse series consists of very deep, moderately well drained soils on stream terraces. These soils formed in alluvium overlying glacial lake sediment. Slopes are 0 to 8 percent. Elevation is 750 to 1,400 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Monse silt loam, 0 to 8 percent slopes, about 3 miles north of the town of Monse; 350 feet west and 600 feet south of the northeast corner of sec. 22, T. 31 N., R. 25 E., W.M.:

A1—0 to 7 inches, grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine interstitial pores; mildly alkaline; clear smooth boundary.
A2—7 to 14 inches; grayish brown (10YR 5/2) silt loam, dark brown (10YR 3/3) moist; moderate fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common fine irregular pores; common very fine interstitial pores; mildly alkaline; clear wavy boundary.
Bw1—14 to 19 inches; light brownish gray (10YR 6/2) silt loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine interstitial pores and few very fine tubular pores; mildly alkaline; clear wavy boundary.
Bw2—19 to 29 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; few medium faint mottles that are brown

(10YR 4/3) when moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine roots; common very fine and fine interstitial and tubular pores; mildly alkaline; clear smooth boundary.

2Bw3—29 to 34 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; common medium distinct mottles that are dark yellowish brown (10YR 4/4) when moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine roots; common very fine and fine interstitial and tubular pores; mildly alkaline; clear smooth boundary.

2Bw4—34 to 40 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; common medium faint mottles that are grayish brown (10YR 5/2) when moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine interstitial and tubular pores; mildly alkaline; abrupt smooth boundary.

2BCk1—40 to 45 inches; light gray (10YR 7/2) silt loam, dark grayish brown (10YR 4/2) moist; common medium prominent mottles that are dark yellowish brown (10YR 4/6) when moist; weak fine and medium subangular blocky structure; hard, friable, sticky and plastic; common very fine and fine interstitial and tubular pores; few very fine soft masses of lime; strongly effervescent; moderately alkaline; clear smooth boundary.

2BCk2—45 to 60 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; common medium distinct mottles that are dark yellowish brown (10YR 4/6) when moist; massive; hard, firm, sticky and plastic; common very fine and fine interstitial and tubular pores; few very fine soft masses of lime; strongly effervescent; moderately alkaline.

The mollic epipedon is 10 to 15 inches thick. Depth to mottles is 15 to 30 inches. The particle-size control section is 20 to 30 percent clay. An apparent water table is present in December through July.

The A horizon has chroma of 2 or 3 moist. It is neutral or mildly alkaline.

The Bw horizon has value of 4 or 5 moist and chroma of 2 or 3 dry and 2 to 4 moist. It is silt loam or silty clay loam. It is mildly alkaline or moderately alkaline.

The 2Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam or silty clay loam. It is mildly alkaline or moderately alkaline. This horizon is absent in some pedons.

The 2BCk horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 1 to 3 dry and 2 to 4 moist. It is silt loam or silty clay loam. It is moderately alkaline or strongly alkaline.

Morical Series

The Morical series consists of moderately deep, well drained soils on summits, shoulders, and backslopes of foothills. These soils formed in residuum and colluvium derived from granitic rock with loess and volcanic ash. Slopes are 8 to 60 percent. Elevation is 2,400 to 3,200 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Morical silt loam, 8 to 30 percent slopes, about 12 miles northeast of Coulee Dam; 800 feet south and 1,300 feet east of the northwest corner of sec. 2, T. 29 N., R. 32 E., W.M.:

A1—0 to 6 inches; brown (10YR 4/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; neutral; clear wavy boundary.

A2—6 to 13 inches; brown (10YR 4/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; neutral; clear wavy boundary.

Bt1—13 to 18 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; common faint clay films on faces of peds and lining pores; 5 percent fine pebbles; neutral; clear wavy boundary.

Bt2—18 to 22 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, firm, sticky and plastic; common very fine and fine roots; common very fine and fine tubular pores; many faint clay films on faces of peds and lining pores; 10 percent fine pebbles; neutral; abrupt wavy boundary.

Cr—22 to 32 inches; weathered granitic bedrock.

Depth to weathered bedrock is 20 to 40 inches. The mollic epipedon is 10 to 18 inches thick. The particle-size control section is 5 to 25 percent pebbles and 18 to 27 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist.

The Bt horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam with 5 to 25 percent pebbles. It is neutral or mildly alkaline.

Moscow Series

The Moscow series consists of moderately deep, well drained soils on shoulders, backslopes, and footslopes of mountains. These soils formed in colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess. Slopes are 20 to 65 percent. Elevation is 3,000 to 4,500 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Moscow silt loam, dry, 40 to 65 percent slopes, about 14 miles southwest of Inchelium; 50 feet south and 2,280 feet east of the northwest corner of sec. 26, T. 32 N., R. 34 E., W.M.:

Oi—2 inches to 0; needles, twigs, mosses, and cones.

A—0 to 3 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine irregular pores; 5 percent pebbles; slightly acid; abrupt wavy boundary.

Bw—3 to 11 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common fine irregular pores; 5 percent pebbles; slightly acid; abrupt wavy boundary.

2BC—11 to 23 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; 20 percent pebbles; neutral; clear wavy boundary.

2C—23 to 34 inches; very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 30 percent pebbles; neutral; gradual wavy boundary.

2Cr—34 to 44 inches; weathered granitic bedrock.

Depth to weathered bedrock is 20 to 40 inches. The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 10 to 30 percent rock fragments. It is medium acid to neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles. This horizon is absent in some pedons.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is loam or silt loam with 0 to 15 percent pebbles.

The 2BC horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 to 5 dry or moist. It is coarse sandy loam or sandy loam with 15 to 30 percent rock fragments.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 15 to 30 percent rock fragments.

Moses Series

The Moses series consists of moderately deep, well drained soils on footslopes, backslopes, and summits of mountains. These soils formed in residuum and colluvium derived from granitic rock with a mantle of volcanic ash. Slopes are 0 to 70 percent. Elevation is 3,500 to 6,800 feet. The average annual precipitation is 25 to 35 inches, the average annual air temperature is 37 to 41 degrees F, and the frost-free period is 70 to 100 days.

Typical pedon of Moses silt loam, 0 to 30 percent slopes, about 15 miles west of Inchelium; 1,000 feet north and 500 feet east of the southwest corner of sec. 15, T. 32 N., R. 34 E., W.M.:

Oi—4 inches to 0; needles, twigs, and grasses.

A—0 to 1 inch; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; medium acid; abrupt wavy boundary.

Bw1—1 inch to 6 inches; yellowish brown (10YR 5/6) silt loam, dark yellowish brown (10YR 4/6) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common fine irregular pores; medium acid (NaF pH 10.7); clear wavy boundary.

Bw2—6 to 13 inches; brownish yellow (10YR 6/6) silt loam, yellowish brown (10YR 5/6) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very

fine, fine, medium, and coarse roots; few fine tubular pores; medium acid (NaF pH 10.8); abrupt wavy boundary.

2Bw3—13 to 20 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; 50 percent pebbles; medium acid; abrupt wavy boundary.

2C—20 to 34 inches; very pale brown (10YR 7/4) very gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; 50 percent pebbles and 5 percent cobbles; strongly acid; clear wavy boundary.

2Cr—34 to 44 inches; weathered granitic bedrock.

The mantle of volcanic ash is 7 to 14 inches thick. Depth to weathered bedrock is 20 to 40 inches. The particle-size control section is 35 to 60 percent rock fragments. A thin A horizon of Mt. St. Helens “T” ash is immediately below the organic layer in some pedons.

The A horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam or extremely bouldery silt loam with 0 to 10 percent pebbles, 0 to 25 percent cobbles, and 0 to 25 percent stones and boulders. It is medium acid to neutral.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 to 5 moist, and chroma of 3 to 6 dry or moist. It is 0 to 10 percent pebbles. It is medium acid to neutral.

The 2Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is coarse sandy loam or sandy loam with 25 to 55 percent pebbles, 0 to 20 percent cobbles, and 5 to 15 percent stones. It is medium acid to neutral.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 or 3 dry or moist. It is sandy loam or coarse sandy loam with 25 to 50 percent pebbles, 5 to 30 percent cobbles, and 0 to 5 percent stones. It is strongly acid to neutral.

Narcisse Series

The Narcisse series consists of very deep, moderately well drained soils on flood plains and low stream terraces. These soils formed in alluvium of mixed mineralogy. Slopes are 0 to 3 percent. Elevation is 1,700 to 2,400 feet. The average annual precipitation is 12 to 18 inches, the average annual air temperature is 45 to 49 degrees F, and the frost-free period is 100 to 150 days.

Typical pedon of Narcisse silt loam, dry, 0 to 3 percent slopes; 1,500 feet east and 1,900 feet north of the southwest corner of sec. 23, T. 29 N., R. 31 E., W.M.:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, black (10YR 2/1) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine irregular pores; slightly acid; gradual smooth boundary.

A1—6 to 10 inches; dark gray (10YR 4/1) silt loam, black (10YR 2/1) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine irregular pores; neutral; clear smooth boundary.

A2—10 to 21 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; neutral; clear smooth boundary.

Bw—21 to 31 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; common fine irregular pores; neutral; abrupt smooth boundary.

C1—31 to 35 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; 10 percent pebbles; neutral; clear smooth boundary.

C2—35 to 46 inches; light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) dry; common fine distinct mottles that are brown (7.5YR 4/4) when moist; massive; slightly hard, friable, slightly sticky and nonplastic; few very fine roots; few fine tubular pores; 10 percent pebbles; neutral; clear smooth boundary.

C3—46 to 60 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 25 percent pebbles; neutral.

The mollic epipedon is 20 to 30 inches thick. The particle-size control section is 0 to 15 percent pebbles. It is slightly acid or neutral. An apparent water table is present in February through April. Occasional, brief periods of flooding occur in February through April.

The A horizon has value of 3 to 5 dry and 1 to 3

moist, and it has chroma of 1 or 2 dry or moist.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist. It is silt loam, loam, or fine sandy loam.

The C horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. The upper part to a depth of 40 inches is silt loam, loam, or sandy loam, and the lower part is stratified silt loam, loam, sandy loam, and loamy sand with 0 to 30 percent pebbles and 0 to 10 percent cobbles.

Nespelem Series

The Nespelem series consists of soils that are moderately deep to a duripan and are well drained. These soils are on terraces and terrace escarpments. They formed in glacial lake sediment with a mantle of loess. Slopes are 0 to 30 percent. Elevation is 1,200 to 2,600 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Nespelem silt loam, 0 to 5 percent slopes, about 9 miles west of Nespelem; 1,850 feet south and 1,600 east of the northwest corner of sec. 22, T. 29 N., R. 31 E., W.M.:

A1—0 to 7 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine and fine roots; common fine irregular pores; neutral; clear smooth boundary.

A2—7 to 12 inches; grayish brown (10YR 5/2) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and fine roots; common fine irregular pores; neutral; clear smooth boundary.

Bw—12 to 22 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine roots; few fine tubular pores; neutral; abrupt smooth boundary.

2Bkqm—22 to 24 inches; light brownish gray (10YR 6/2) weakly lime- and silica-cemented duripan, grayish brown (10YR 5/2) moist; massive; very hard, very firm, slightly sticky and slightly plastic; few fine roots at top of duripan; few filaments and soft masses of secondary lime; slightly effervescent; strongly alkaline; clear smooth boundary.

2Bk1—24 to 32 inches; light gray (2.5Y 7/2) silt loam, light brownish gray (2.5Y 6/2) moist; massive with fine varves; slightly hard, friable, slightly sticky and slightly plastic; few filaments and soft masses of secondary lime; slightly effervescent; strongly alkaline; clear smooth boundary.

2Bk2—32 to 43 inches; light gray (2.5Y 7/2) silt loam, light brownish gray (2.5Y 6/2) moist; massive with fine varves; hard, firm, slightly sticky and slightly plastic; few filaments and soft masses of secondary lime; strongly effervescent; strongly alkaline; clear smooth boundary.

2Bk3—43 to 60 inches; light gray (2.5Y 7/2) silt loam, light brownish gray (2.5Y 6/2) moist; massive with fine varves; hard, firm, sticky and slightly plastic; few filaments and soft masses of secondary lime; slightly effervescent; strongly alkaline.

Depth to the duripan is 20 to 40 inches. The mollic epipedon is 10 to 20 inches thick. Depth to secondary lime accumulation is 16 to 36 inches. The particle-size control section is 10 to 18 percent clay and less than 15 percent material that is coarser than very fine sand.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. The lower part is silt loam or very fine sandy loam. The horizon is slightly acid or neutral.

The Bw horizon has hue of 10YR or 2.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is silt loam or very fine sandy loam. It is neutral or mildly alkaline.

The 2Bkqm horizon has hue of 10YR or 2.5YR, value of 6 or 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is moderately alkaline or strongly alkaline.

The 2Bk horizon has hue of 10YR, 2.5Y, or 5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 1 to 4 dry or moist. It is stratified very fine sandy loam to silty clay loam. It is moderately alkaline or strongly alkaline.

Neuske Series

The Neuske series consists of soils that are deep to dense glacial till and are well drained. These soils are on ground moraines and on footslopes and backslopes of mountains. The soils formed in glacial till mixed with volcanic ash and loess. Slopes are 0 to 40 percent. Elevation is 1,800 to 3,300 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Neuske silt loam, 0 to 20 percent slopes, about 4 miles southeast of Disautel; 350 feet south and 50 feet east of the northwest corner of sec. 33, T. 33 N., R. 29 E., W.M.:

Oi—1 inch to 0; needles, twigs, and grass.

A—0 to 5 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium roots; few very fine interstitial pores; neutral; clear wavy boundary.

AE—5 to 24 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; few very fine interstitial pores; 5 percent pebbles; neutral; clear irregular boundary.

E—24 to 30 inches; light gray (2.5Y 7/2) loam, grayish brown (2.5Y 5/2) moist; weak medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; common very fine interstitial pores; 5 percent pebbles; neutral; clear wavy boundary.

Bt/E—30 to 39 inches; light brownish gray (2.5Y 6/2) loam (B part), dark grayish brown (2.5Y 4/2) moist, and light gray (2.5Y 7/2) loam (E part), grayish brown (2.5Y 5/2) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; few faint clay films on faces of peds and lining pores; 5 percent pebbles; neutral; clear wavy boundary.

2Bt—39 to 50 inches; pale brown (10YR 6/3) and light gray (2.5Y 7/2) clay loam, brown (10YR 4/3) and grayish brown (2.5Y 5/2) moist; moderate medium angular blocky structure; very hard, firm, sticky and plastic; few very fine and fine roots; common very fine tubular pores; common distinct clay films on faces of peds and in pores; 5 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

2BCtd—50 to 60 inches; light gray (2.5Y 7/2) dense glacial till that crushes to cobbly loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine roots; few very fine interstitial pores; few faint clay films on faces of peds; 5 percent pebbles and 5 percent cobbles; neutral.

Depth to dense glacial till is 40 to 60 inches. The particle-size control section is 27 to 35 percent clay and 5 to 25 rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles. It is slightly acid or neutral.

The AE and E horizons and the E part of the Bt/E horizon are 5 to 15 percent pebbles. They are slightly acid or neutral.

The 2Bt horizon and the Bt part of the Bt/E horizon have hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. They are loam, sandy clay loam, or clay loam with 5 to 25 percent pebbles and 0 to 15 percent cobbles. They are slightly acid to mildly alkaline.

The 2BCtd horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is loam, sandy clay loam, or clay loam with 5 to 15 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline.

Nevine Series

The Nevine series consists of soils that are moderately deep to dense glacial till and are well drained (fig. 22). These soils are on toeslopes, footslopes, and backslopes of hills and mountains. They formed in a mantle of volcanic ash over glacial till. Slopes are 5 to 65 percent. Elevation is 2,000 to 4,500 feet. The average annual precipitation is 16 to 24 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Nevine silt loams association, 5 to 20 percent slopes, about 12 miles north of Nespelem; 1,500 feet north and 1,600 feet east of the southwest corner of sec. 24, T. 33 N., R. 30 E., W.M.:

Oi—2 inches to 0; needles, twigs, and cones.

A—0 to 1 inch; 60 percent pale brown (10YR 6/3) and 40 percent light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common fine irregular pores; neutral; abrupt smooth boundary.

Bw1—1 inch to 4 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; weakly smeary; many very fine and fine roots and common medium roots; common fine irregular pores; 2 percent pebbles; slightly acid; clear smooth boundary.

Bw2—4 to 9 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; weakly smeary; many very fine and fine roots and common medium and coarse roots; few fine tubular pores;

2 percent pebbles; slightly acid; abrupt wavy boundary.

Bw3—9 to 18 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; weakly smeary; many very fine and fine roots; few fine tubular pores; 10 percent pebbles; slightly acid; abrupt wavy boundary.

2BC—18 to 28 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine and few fine roots; few fine tubular pores; 45 percent pebbles and 5 percent cobbles; medium acid; gradual wavy boundary.

2Cd1—28 to 41 inches; white (10YR 8/2) dense glacial till that crushes to very gravelly sandy loam, brown (10YR 5/3) moist; massive; hard, friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 35 percent pebbles and 2 percent cobbles; medium acid; diffuse smooth boundary.

2Cd2—41 to 60 inches; white (10YR 8/2) dense glacial till that crushes to very gravelly loamy sand, pale brown (10YR 6/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 40 percent pebbles and 5 percent cobbles; medium acid.

Depth to dense glacial till is 20 to 40 inches. The mantle of volcanic ash is 14 to 25 inches thick.

The A horizon has value of 4 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles and 0 to 5 percent cobbles. It is slightly acid or neutral.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam with 0 to 20 percent pebbles and 0 to 5 percent cobbles. It is slightly acid or neutral.

The 2BC horizon has value of 4 or 5 moist and chroma of 3 or 4 dry or moist. It is loam or sandy loam with 30 to 45 percent pebbles, 0 to 20 percent cobbles, and 0 to 5 percent stones. It is medium acid to neutral.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. The upper part is sandy loam or coarse sandy loam and is very gravelly or very cobbly, and the lower part is sandy loam or loamy sand with 30 to 45 percent pebbles, 5 to 20 percent cobbles, and 0 to 15 percent stones. The horizon is medium acid to neutral.

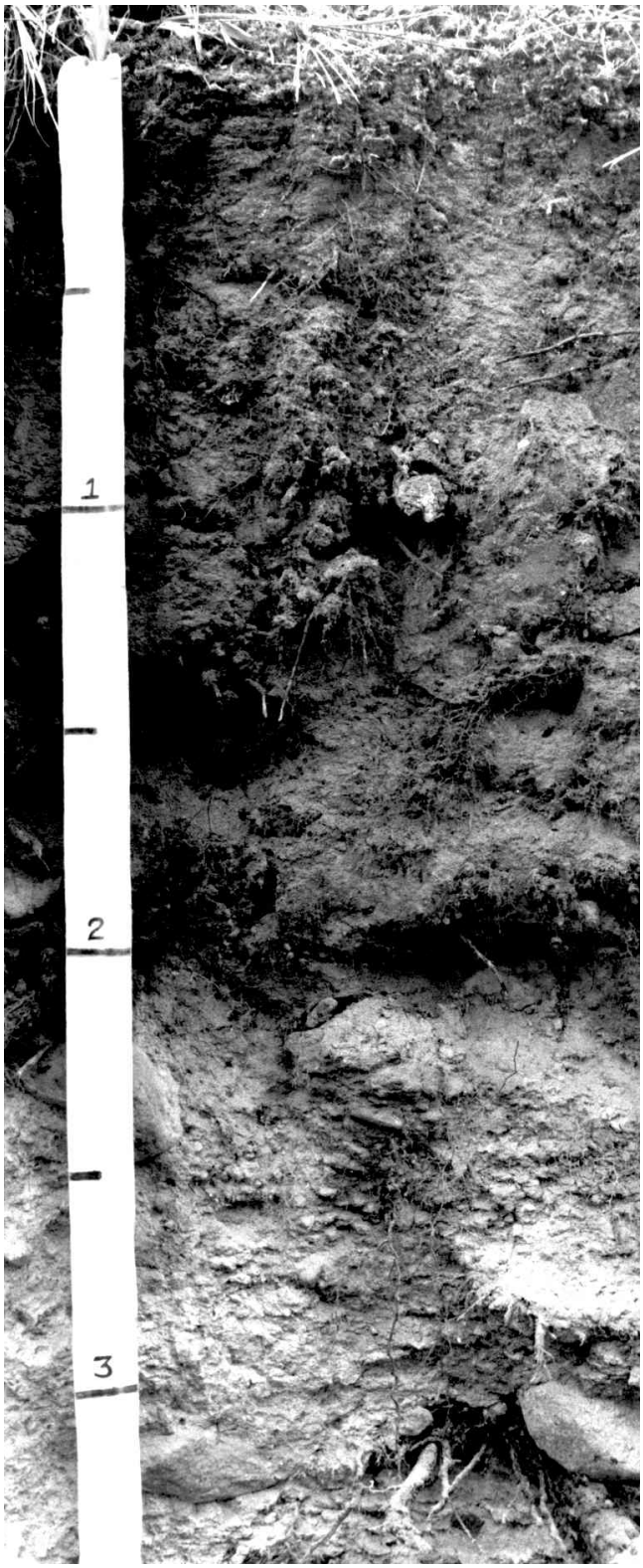


Figure 22.—Typical pedon of a Nevine soil that has a mantle of ash about 25 inches thick over loamy-skeletal glacial till to a depth of about 40 inches. Dense material is at a depth of about 40 inches. (Numbers on tape represent feet.)

Newbell Series

The Newbell series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on toeslopes, footslopes, and backslopes of mountains. They formed in glacial till with a mantle of volcanic ash and loess. Slopes are 5 to 65 percent. Elevation is 2,400 to 4,500 feet. The average annual precipitation is 19 to 24 inches, the average annual air temperature is 43 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Newbell silt loam, dry, 5 to 20 percent slopes, about 11 miles northwest of Inchelium; 200 feet north and 50 feet west of the southeast corner of sec. 29, T. 33 N., R. 35 E., W.M.:

Oi—1.5 inches to 0; needles, leaves, and twigs.

A—0 to 1 inch; dark brown (10YR 4/3) silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium and coarse roots; common fine tubular pores; 10 percent pebbles; neutral; clear smooth boundary.

Bw1—1 inch to 5 inches; light yellowish brown (10YR 6/4) silt loam, dark brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common fine tubular pores; 10 percent pebbles; neutral; gradual wavy boundary.

Bw2—5 to 11 inches; light yellowish brown (10YR 6/4) silt loam, yellowish brown (10YR 5/6) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common fine tubular pores; 10 percent pebbles; slightly acid; gradual wavy boundary.

2Bw3—11 to 21 inches; very pale brown (10YR 7/3) very gravelly loam, yellowish brown (10YR 5/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; 35 percent pebbles and 5 percent cobbles; slightly acid; clear smooth boundary.

2Cd1—21 to 45 inches; very pale brown (10YR 7/3) dense glacial till that crushes to very gravelly loam, pale brown (10YR 6/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; few fine tubular pores; 40 percent pebbles and 5 percent cobbles; slightly acid; gradual wavy boundary.

2Cd2—45 to 60 inches; very pale brown (10YR 7/3) dense glacial till that crushes to very gravelly loam, pale brown (10YR 6/3) moist; massive; hard, friable, slightly sticky and slightly plastic; very few fine roots; few fine tubular pores; 45 percent pebbles and 5 percent cobbles; slightly acid.

Depth to dense glacial till is 20 to 40 inches. The mantle of volcanic ash is 10 to 18 inches thick. The particle-size control section is 35 to 60 percent rock fragments. It is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 to 5 moist, and chroma of 4 to 6 dry or moist. It is 0 to 10 percent pebbles.

The 2Bw horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is loam or sandy loam with 30 to 50 percent pebbles and 5 to 15 percent cobbles. This horizon is absent in some pedons.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 35 to 60 percent pebbles and 5 to 20 percent cobbles.

Northstar Series

The Northstar series consists of moderately deep, well drained soils on ridges, shoulders, and backslopes of hills and mountains. These soils formed in colluvium and residuum derived from rhyodacite and quartz latite with a component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 1,600 to 3,800 feet. The average annual precipitation is 15 to 20 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Northstar gravelly loam in an area of Northstar-Johntom-Rock outcrop complex, 30 to 65 percent slopes, about 6 miles north of Nespelem; 1,050 feet west and 2,600 feet north of the southeast corner of sec. 29, T. 32 N., R. 31 E., W.M.:

Oi—1.5 inches to 0.5 inch; ponderosa pine needles, twigs, and cones.

Oe—0.5 inch to 0; partially decomposed needles, leaves, and twigs.

A1—0 to 2 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, nonsticky and slightly plastic; many very fine, fine, and medium roots and few coarse roots; common fine tubular pores; 30 percent

angular pebbles; medium acid; clear smooth boundary.
A2—2 to 11 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; common fine tubular pores; 35 percent angular pebbles and 5 percent cobbles; slightly acid; clear wavy boundary.
Bw—11 to 18 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common fine irregular pores; 45 percent angular pebbles and 10 percent cobbles; slightly acid; gradual wavy boundary.
C—18 to 27 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 4/3) dry; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; few fine tubular pores; 40 percent angular pebbles, and 25 percent cobbles; slightly acid; gradual wavy boundary.
R—27 to 31 inches; rhyodacite bedrock.

Depth to bedrock is 20 to 40 inches. The particle-size control section is 10 to 18 percent clay and 35 to 70 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is gravelly loam or very gravelly loam with 15 to 35 percent pebbles and 0 to 5 percent cobbles. It is medium acid or slightly acid.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is 35 to 65 percent pebbles and 5 to 30 percent cobbles. It is slightly acid or neutral.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is loam or sandy loam with 35 to 65 percent pebbles, 5 to 30 percent cobbles, and 0 to 5 percent stones. It is slightly acid or neutral. This horizon is absent in some pedons.

Ohscow Series

The Ohscow series consists of very deep, well drained soils on footslopes and backslopes of mountains. These soils formed in colluvium and residuum derived from granitic rock with a mantle of volcanic ash and loess. Slopes are 20 to 65 percent. Elevation is 2,200 to 5,000 feet. The average annual precipitation is 20 to 25 inches, the average annual air temperature is 41 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Ohscow silt loam, 20 to 40 percent slopes, about 20 miles west of Inchelium; 500 feet south and 100 feet west of the northeast corner of sec. 16, T. 33 N., R. 34 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.
A—0 to 4 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine irregular pores; 45 percent pebbles; slightly acid; clear wavy boundary.
Bw1—4 to 11 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common fine irregular pores; 10 percent pebbles; slightly acid; abrupt wavy boundary.
2Bw2—11 to 27 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine irregular pores; 25 percent pebbles and 10 percent cobbles; slightly acid; gradual wavy boundary.
2C1—27 to 46 inches; light gray (10YR 7/2) very cobbly sandy loam, brown (10YR 5/3) moist; massive; loose, nonsticky and nonplastic; few fine, medium, and coarse roots; few fine tubular pores; 30 percent pebbles, 20 percent cobbles, and 2 percent stones; slightly acid; gradual wavy boundary.
2C2—46 to 60 inches; light gray (10YR 7/2) very cobbly loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 30 percent pebbles, 20 percent cobbles, and 5 percent stones; slightly acid.

The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 35 to 70 percent rock fragments. It is neutral or slightly acid.

The A horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 to 6 dry or moist. It is loam or silt loam with 10 to 25 percent pebbles and 0 to 5 percent cobbles.

The 2Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is 20 to 45 percent pebbles and 0 to 20 percent cobbles.

The 2C1 horizon has value of 6 or 7 dry and 5 or 6 moist, and it has chroma of 2 or 3 dry and 3 or 4 moist. It is 10 to 45 percent pebbles, 15 to 30 percent cobbles, and 0 to 5 percent stones.

The 2C2 horizon has value of 6 or 7 dry and 5 or 6 moist, and it has chroma of 2 or 3 dry and 3 or 4 moist. It is loamy sand or sandy loam with 30 to 45 percent pebbles, 15 to 30 percent cobbles, and 0 to 5 percent stones.

Okanogan Series

The Okanogan series consists of very deep, well drained soils on flood plains and low stream terraces. These soils formed in alluvium of mixed mineralogy. Slopes are 0 to 5 percent. Elevation is 780 to 900 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Okanogan loam, 0 to 5 percent slopes, about 1 mile southwest of Malott; 1,000 feet south and 300 feet west of the northeast corner of sec. 17, T. 32 N., R. 25 E., W.M.:

A1—0 to 14 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic, many fine, medium, and coarse roots; many fine irregular pores; neutral; gradual wavy boundary.

A2—14 to 24 inches; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and few medium roots; common fine irregular pores and few fine tubular pores; mildly alkaline; gradual wavy boundary.

AC—24 to 42 inches; brown (10YR 5/3) very fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and few medium roots; few fine irregular and tubular pores; slightly effervescent; mildly alkaline; gradual wavy boundary.

C1—42 to 48 inches; pale brown (10YR 6/3) fine sandy loam, dark yellowish brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine irregular and tubular pores; slightly effervescent; mildly alkaline; clear wavy boundary.

C2—48 to 51 inches; pale brown (10YR 6/3) fine sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few fine irregular and tubular pores; slightly effervescent; mildly alkaline; abrupt wavy boundary.

C3—51 to 60 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine irregular and tubular pores; slightly effervescent; moderately alkaline.

The particle-size control section is 0 to 10 percent pebbles. The mollic epipedon is 20 to 35 inches thick. The content of organic carbon decreases irregularly as depth increases. Occasional periods of flooding occur in January through April.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is neutral or mildly alkaline.

The AC horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry. It is loam, silt loam, or very fine sandy loam. It is neutral or mildly alkaline. This horizon is absent in some pedons.

The C horizon has value of 5 or 6 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry and 2 to 4 moist. It is stratified sand to silt loam. In some pedons the lower part has lenses of loamy fine sand or fine sand 1 to 3 inches thick. The horizon is mildly alkaline or moderately alkaline.

Olical Series

The Olical series consists of deep, well drained soils on mounds in areas of patterned ground on basalt plateaus. These soils formed in loess mixed with material weathered from basalt. Slopes are 0 to 30 percent. Elevation is 2,300 to 2,700 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Olical silt loam in an area of Bakeoven-Olical complex, 0 to 30 percent slopes, about 2 miles east of Coulee Dam; 1,200 feet north and 1,600 feet east of the southwest corner of sec. 33, T. 29 N., R. 33 E., W.M.:

A1—0 to 2 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/3) moist; weak very fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many very fine irregular pores; 3 percent pebbles; neutral; abrupt smooth boundary.

A2—2 to 15 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium

subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine roots; many very fine irregular pores; 3 percent pebbles; neutral; clear smooth boundary.

Bw—15 to 23 inches; light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine roots; common very fine tubular pores; 5 percent pebbles; strongly effervescent; strongly alkaline; clear smooth boundary.

Bk1—23 to 38 inches; light yellowish brown (10YR 6/4) gravelly silt loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common fine and medium roots; common very fine tubular pores; 20 percent pebbles; common fine filaments of secondary lime; violently effervescent; strongly alkaline; clear smooth boundary.

Bk2—38 to 51 inches; light yellowish brown (10YR 6/4) gravelly loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and nonplastic; few fine roots; few fine tubular pores; 30 percent pebbles; common fine filaments of secondary lime; violently effervescent; strongly alkaline; abrupt smooth boundary.

R—51 to 55 inches; basalt bedrock.

Depth to bedrock is 40 to 60 inches. Depth to secondary carbonates is 20 to 40 inches. The mollic epipedon is 10 to 18 inches thick. The particle-size control section is 10 to 18 percent clay and 5 to 20 percent rock fragments.

The A horizon has chroma of 2 or 3 dry or moist.

The Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam, loam, or very fine sandy loam with 0 to 15 percent rock fragments. It is moderately alkaline or strongly alkaline.

The Bk horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam. The upper part is 10 to 30 percent pebbles and 0 to 5 percent cobbles, and the lower part is 20 to 40 percent pebbles and 0 to 20 percent cobbles.

The Olical soils in this survey area are a taxadjunct to the Olical series because the particle-size control section is coarse-loamy and that of the series is coarse-silty. This difference, however, does not significantly affect use and management.

Omak Series

The Omak series consists of soils that are moderately deep to a duripan and are moderately well drained. These soils are on terraces. They formed in intermixed glacial lake sediment and glacial till with a component of loess and volcanic ash. Slopes are 0 to 8 percent. Elevation is 2,100 to 3,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Omak silt loam, 0 to 8 percent slopes, about 11 miles east of Omak; 1,100 feet north and 1,500 feet west of the southeast corner of sec. 21, T. 33 N., R. 28 E., W.M.:

Oi—2 inches to 0; ponderosa pine needles, twigs, and cones.

A1—0 to 5 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak very fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine roots; many very fine irregular pores; neutral; clear smooth boundary.

A2—5 to 10 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and few medium roots; many very fine irregular pores; neutral; clear smooth boundary.

E—10 to 15 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and medium roots and few coarse roots; common very fine tubular pores; 2 percent pebbles; neutral; abrupt smooth boundary.

Bt/E—15 to 26 inches; 60 percent light brownish gray (2.5Y 6/2) silt loam (B part), olive brown (2.5Y 4/4) moist, and 40 percent light gray (2.5Y 6/2) silt loam (E part), light brownish gray (2.5Y 6/2) moist; moderate fine angular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine roots; common fine irregular pores; few faint clay films on faces of peds (B part); neutral; abrupt smooth boundary.

Bt—26 to 38 inches; light yellowish brown (2.5Y 6/4) silty clay loam, olive brown (2.5Y 4/4) moist; moderate fine angular blocky structure; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; common distinct clay films on faces of peds; neutral; clear smooth boundary.

Bqm—38 to 45 inches; light yellowish brown (2.5Y 6/4) strongly silica-cemented duripan, olive brown

(2.5Y 4/4) moist; massive; very hard, very firm, slightly sticky and nonplastic; mat of very fine roots at top of duripan; 5 percent pebbles; moderately alkaline; abrupt wavy boundary.

Bkqm—45 to 60 inches; light gray (2.5Y 7/2), indurated, silica-cemented duripan, olive brown (2.5Y 4/4) moist; massive; 5 percent pebbles; weakly effervescent; few masses of segregated lime; strongly alkaline.

The mollic epipedon is 7 to 14 inches thick. Depth to the strongly cemented duripan is 20 to 40 inches, and depth to the indurated duripan is 40 to 60 inches. The particle-size control section is 35 to 45 percent clay. A perched water table is present in February through April.

The A horizon has value of 4 or 5 dry and chroma of 1 to 3 dry or moist. It is 0 to 10 percent pebbles. It is slightly acid or neutral.

The E horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loam or silt loam with 0 to 10 percent pebbles. It is slightly acid or neutral.

The Bt part of the Bt/E horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. The E part has hue of 10YR or 2.5Y, value of 6 to 8 dry and 5 or 6 moist, and chroma of 1 to 3 dry or moist. It is 0 to 10 percent pebbles. It is slightly acid or neutral.

The Bt horizon has hue of 2.5Y or 10YR, value of 5 to 7 dry and 4 to 7 moist, and chroma of 2 to 4 dry or moist. It is clay loam, silty clay loam, or silty clay with 0 to 10 percent pebbles and 0 to 5 percent cobbles.

The Bqm horizon has hue of 2.5Y or 10YR, value of 5 to 7 dry and 4 to 7 moist, and chroma of 2 to 4 dry or moist. It is mildly alkaline or moderately alkaline.

The Bkqm horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is moderately alkaline or strongly alkaline.

Owhi Series

The Owhi series consists of very deep, well drained soils on terraces and terrace escarpments. These soils formed in glacial outwash with a component of loess in the upper part. Slopes are 0 to 30 percent. Elevation is 1,200 to 2,700 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Owhi loam, 0 to 8 percent slopes, about 6 miles northeast of Nespelem; 1,200 feet north and 600 feet west of the southeast corner of sec. 1, T. 31 N., R. 31 E., W.M.:

A1—0 to 7 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

A2—7 to 12 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; many very fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

Bw—12 to 20 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine roots; common fine irregular pores; 15 percent pebbles; neutral; clear wavy boundary.

BC—20 to 26 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; few fine tubular pores; 40 percent pebbles and 2 percent cobbles; neutral; abrupt smooth boundary.

C—26 to 60 inches; multicolored extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few fine roots; few fine tubular pores; 70 percent pebbles; neutral.

The mollic epipedon is 9 to 14 inches thick. The particle-size control section is 35 to 50 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loam, stony loam, or fine sandy loam with 0 to 15 percent pebbles and 0 to 5 percent stones. It is slightly acid or neutral.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam with 10 to 30 percent pebbles and 0 to 10 percent cobbles. It is slightly acid or neutral.

The BC horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loamy sand, sandy loam, or fine sandy loam with 10 to 40 percent pebbles and 0 to 5 percent cobbles. It is slightly acid or neutral.

The C horizon is multicolored. It is loamy sand or coarse sand with 40 to 70 percent pebbles and 0 to 5 percent cobbles. It is neutral or mildly alkaline.

Oxerine Series

The Oxerine series consists of moderately deep, well drained soils on footslopes, backslopes, shoulders, and ridges of hills and mountains. These soils formed in residuum and colluvium derived from metamorphic and sedimentary rock with a mantle of volcanic ash. Slopes are 5 to 65 percent. Elevation is 2,000 to 5,700 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Oxerine silt loam, 5 to 20 percent slopes, about 10 miles northwest of Inchelium; 1,000 feet north and 500 feet east of the southwest corner of sec. 25, T. 34 N., R. 35 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.
A—0 to 5 inches; brown (10YR 5/3) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine irregular pores; 10 percent pebbles; slightly acid (NaF pH 10.1); clear wavy boundary.
Bw1—5 to 11 inches; brown (10YR 5/3) channery silt loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common fine irregular pores; 25 percent channers; slightly acid (NaF pH 10.1); gradual wavy boundary.
2Bw2—11 to 20 inches; light yellowish brown (10YR 6/4) very channery loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, nonsticky and slightly plastic; many very fine and fine roots; common fine irregular pores; 35 percent channers and 5 percent flagstones; neutral; abrupt wavy boundary.
2C—20 to 28 inches; light yellowish brown (10YR 6/4) very channery loam, yellowish brown (10YR 5/4) moist; massive; soft, friable, nonsticky and slightly plastic; few very fine roots; few fine tubular pores; 45 percent channers, 15 percent soft channer-sized fragments, and 15 percent flagstones; neutral; abrupt irregular boundary.
2R—28 inches; phyllite bedrock.

Depth to bedrock is 20 to 40 inches. The mantle of volcanic ash is 9 to 14 inches thick.

The A horizon has value of 4 or 5 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is 5 to 15 percent channers and pebbles. The horizon is slightly acid or neutral.

The Bw and 2Bw horizons have hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 to 5 moist, and chroma of 3 or 4 dry or moist. They are silt loam or loam with 0 to 35 percent channers, 0 to 20 percent pebbles, 0 to 5 percent flagstones, and 0 to 5 percent cobbles. They are slightly acid or neutral.

The 2C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 6 moist, and chroma of 1 to 4 dry or moist. It is sandy loam or loam with 0 to 50 percent channers, 15 to 45 percent pebbles, 10 to 40 percent flagstones, 0 to 20 percent cobbles, and 0 to 5 percent stones. It is dominantly slightly acid or neutral, but it is mildly alkaline or moderately alkaline in the soils of the limestone substratum phase (detailed soil map unit 384).

Parmenter Series

The Parmenter series consists of very deep, well drained soils on kames, kame terraces, and outwash terraces. These soils formed in glacial outwash with a mantle of volcanic ash. Slopes are 0 to 40 percent. Elevation is 1,900 to 3,500 feet. The average annual precipitation is 15 to 22 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Parmenter silt loam, 0 to 8 percent slopes, about 22 miles northeast of Nespelem; 100 feet south and 300 feet east of the northwest corner of sec. 24, T. 34 N., R. 32 E., W.M.:

Oi—0.5 inch to 0; needles, twigs, bark, and cones.
A—0 to 4 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; few very fine irregular pores; 10 percent pebbles and 3 percent cobbles; neutral; clear wavy boundary.
Bw—4 to 16 inches; pale brown (10YR 6/3) stony silt loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; few very fine irregular pores; 10 percent pebbles, 5 percent cobbles, and 2 percent stones; neutral; abrupt wavy boundary.
2C1—16 to 31 inches; pale brown (10YR 6/3) very stony loamy sand, brown (10YR 4/3) moist; massive; loose, nonsticky and nonplastic; common very fine, fine, and medium roots; 25 percent pebbles, 20 percent cobbles, and 10 percent stones; neutral; clear wavy boundary.
2C2—31 to 60 inches; multicolored extremely cobbly coarse sand; single grain; loose, nonsticky and nonplastic; coarsely stratified; 35 percent pebbles,

20 percent cobbles, and 10 percent stones; neutral.

The mantle of volcanic ash is 14 to 28 inches thick. The profile is slightly acid or neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is silt loam or bouldery silt loam with 0 to 10 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones and boulders.

The Bw horizon has chroma of 3 or 4 dry or moist. It is 0 to 15 percent pebbles, 5 to 15 percent cobbles, and 0 to 5 percent stones and boulders.

The upper part of the 2C horizon has value of 6 or 7 dry and chroma of 2 or 3 dry or moist, and the lower part is multicolored. The horizon typically is stratified loamy fine sand, loamy sand, sand, loamy coarse sand, or coarse sand with 25 to 60 percent pebbles, 20 to 25 percent cobbles, and 5 to 25 percent stones and boulders.

Peshastin Series

The Peshastin series consists of very deep, well drained soils on moraines and terraces. These soils formed in glacial outwash and ablation glacial till with a component of loess. Slopes are 0 to 60 percent. Elevation is 900 to 2,400 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Peshastin stony fine sandy loam, 0 to 10 percent slopes, about 7 miles northeast of Bridgeport; 300 feet south and 1,800 feet east of the northwest corner of sec. 35, T. 30 N., R. 26 E., W.M.:

A—0 to 10 inches; grayish brown (10YR 5/2) stony fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; common fine and medium interstitial pores; 5 percent pebbles, 5 percent cobbles, and 5 percent stones and boulders; mildly alkaline; gradual wavy boundary.

Bw—10 to 21 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few fine and medium roots; common fine and medium interstitial pores; 5 percent pebbles and 5 percent cobbles; mildly alkaline; clear wavy boundary.

Bk—21 to 60 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark brown (10YR 4/3) moist; massive; soft, friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 40 percent pebbles, 10 percent cobbles, and 5 percent stones; accumulation of secondary carbonates on underside of rock fragments; strongly effervescent; moderately alkaline.

Depth to secondary carbonates is 15 to 27 inches. The mollic epipedon is 7 to 16 inches thick.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is stony fine sandy loam or extremely bouldery loam with 5 to 25 percent stones and boulders, 5 to 25 percent cobbles, and 5 to 25 percent pebbles. It is neutral or mildly alkaline.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loam, fine sandy loam, or sandy loam with 5 to 15 percent pebbles, 5 to 15 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline.

The Bk horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is 30 to 60 percent pebbles, 10 to 25 percent cobbles, and 0 to 5 percent stones. It is mildly alkaline to strongly alkaline.

Phoebe Series

The Phoebe series consists of very deep, well drained soils on terraces, terrace escarpments, and backslopes of hills. These soils formed in glacial till and outwash with a component of volcanic ash and loess. Slopes are 0 to 65 percent. Elevation is 1,300 to 2,500 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Phoebe fine sandy loam, 40 to 65 percent slopes, about 6 miles northeast of Omak; 790 feet south and 1,450 feet east of the northwest corner of sec. 10, T. 34 N., R. 27 E., W.M.:

A1—0 to 3 inches; dark grayish brown (10YR 4/2) fine sandy loam, black (10YR 2/1) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine irregular pores; neutral; clear smooth boundary.

A2—3 to 11 inches; grayish brown (10YR 5/2) fine sandy loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine irregular pores; neutral; clear smooth boundary.

Bw1—11 to 30 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few

very fine, fine, medium, and coarse roots; many very fine irregular pores; neutral; clear smooth boundary.

Bw2—30 to 47 inches; pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine, fine, and medium roots; many very fine irregular pores; neutral; clear wavy boundary.

C—47 to 60 inches; pale brown (10YR 6/3) loamy sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; neutral.

The mollic epipedon is 20 to 32 inches thick. Depth to the C horizon is 30 to 60 inches or more. The particle-size control section averages 0 to 10 percent rock fragments and 5 to 15 percent clay. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is fine sandy loam or sandy loam with 0 to 10 percent pebbles.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loamy sand or sand with 0 to 15 percent pebbles.

Picard Series

The Picard series consists of very deep, well drained soils on terraces and terrace escarpments. These soils formed in glaciofluvial material with a component of loess. Slopes are 0 to 30 percent. Elevation is 1,200 to 2,700 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Picard very fine sandy loam, 0 to 8 percent slopes, about 2 miles east of Nespelem; 2,000 feet south and 2,150 feet west of the northeast corner of sec. 20, T. 31 N., R. 31 E., W.M.:

A1—0 to 5 inches; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and common medium roots; many very fine tubular pores; neutral; clear smooth boundary.

A2—5 to 16 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and few medium roots; common very fine tubular pores; neutral; clear smooth boundary.

Bw1—16 to 27 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very few roots, common fine roots, and few medium roots, common very fine tubular pores; neutral; clear smooth boundary.

Bw2—27 to 40 inches; light yellowish brown (10YR 6/4) fine sandy loam, olive brown (2.5Y 4/4) moist; weak medium subangular blocky structure parting to weak fine subangular blocky; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular pores; neutral; gradual smooth boundary.

C1—40 to 51 inches; light yellowish brown (10YR 6/4) fine sandy loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine tubular pores; neutral; gradual smooth boundary.

C2—51 to 60 inches; light yellowish brown (2.5Y 6/4) loamy fine sand, light olive brown (2.5Y 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; neutral.

The mollic epipedon is 10 to 18 inches thick. The solum is 25 to 45 inches thick. The particle-size control section is 5 to 15 percent clay and 0 to 10 percent pebbles.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 5 percent pebbles. It is slightly acid or neutral.

The Bw horizon has hue of 10YR or 2.5Y moist, value of 5 or 6 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is very fine sandy loam, fine sandy loam, or loam with 0 to 10 percent pebbles. It is slightly acid or neutral.

The C horizon has hue of 10YR or 2.5Y, value of 6 to 8 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. The upper part is very fine sandy loam, fine sandy loam, or sandy loam, and the lower part is very fine sandy loam or loamy fine sand. The horizon is 0 to 20 percent pebbles. It is neutral or mildly alkaline.

Pogue Series

The Pogue series consists of very deep, somewhat excessively drained soils on terraces and terrace

escarpments. These soils formed in glacial outwash with a component of loess in the upper part. Slopes are 0 to 65 percent. Elevation is 800 to 2,000 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Pogue fine sandy loam, 0 to 5 percent slopes, about 2 miles northeast of Elmer City; 900 feet south and 580 feet east of the northeast corner of sec. 16, T. 29 N., R. 31 E., W.M.:

A1—0 to 2 inches; brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine tubular pores; neutral; clear smooth boundary.

A2—2 to 8 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; moderate thick platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common very fine and fine tubular pores; neutral; clear smooth boundary.

Bw—8 to 14 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots and few medium roots; common very fine tubular pores; 5 percent pebbles; neutral; clear wavy boundary.

BC—14 to 22 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; 25 percent pebbles; mildly alkaline; abrupt wavy boundary.

2C1—22 to 29 inches; light brownish gray (2.5Y 6/2) very gravelly loamy coarse sand, dark brownish gray (2.5Y 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; 45 percent pebbles and 10 percent cobbles; mildly alkaline; clear wavy boundary.

2C2—29 to 60 inches; multicolored very gravelly sand; single grain; loose, nonsticky and nonplastic; few very fine roots; 55 percent pebbles and 10 percent cobbles; moderately alkaline.

The mollic epipedon is 7 to 16 inches thick. Depth to the 2C horizon is 20 to 30 inches. The upper part of the particle-size control section is 35 to 70 percent rock fragments.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is fine sandy loam, gravelly fine sandy loam, or stony fine sandy loam with 0 to 30 percent pebbles, 0 to 15 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline.

The Bw horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is fine sandy loam, sandy loam, or loam with 5 to 30 percent pebbles and 0 to 10 percent cobbles. It is neutral or mildly alkaline.

The BC horizon is absent in some pedons.

The upper part of the 2C horizon has hue of 10YR or 2.5Y, and the lower part is multicolored. The horizon is coarse sand, loamy coarse sand, sand, or loamy sand with 30 to 55 percent pebbles and 5 to 30 percent cobbles. It is neutral to moderately alkaline.

Poween Series

The Poween series consists of very deep, moderately well drained soils on stream terraces and alluvial fans. These soils formed in calcareous alluvium of mixed mineralogy. Slopes are 0 to 5 percent. Elevation is 1,600 to 2,600 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Poween loam, 0 to 5 percent slopes, about 6 miles southeast of Nespelem; 1,800 feet south and 600 feet east of the northwest corner of sec. 12, T. 30 N., R. 31 E., W.M.:

A1—0 to 12 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine irregular pores; 5 percent pebbles; moderately alkaline; gradual wavy boundary.

A2—12 to 30 inches; dark grayish brown (10YR 4/2) sandy loam, very dark gray (10YR 3/1) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine irregular pores; 10 percent pebbles; violently effervescent; strongly alkaline; clear wavy boundary.

AC—30 to 44 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common fine roots; many very fine irregular pores; 10 percent pebbles; violently effervescent; strongly alkaline; clear wavy boundary.

C—44 to 60 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, slightly sticky and nonplastic; few fine roots; few fine tubular pores;

10 percent pebbles; violently effervescent; moderately alkaline.

The mollic epipedon is 20 to 50 inches thick. The particle-size control section is 5 to 18 percent clay and 0 to 15 percent pebbles. It is moderately alkaline or strongly alkaline. An apparent water table is present in February through May.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. The lower part is loam, silt loam, or sandy loam with 0 to 10 percent pebbles.

The AC horizon has value of 5 or 6 dry and chroma of 2 or 3 dry or moist. It is sandy loam, fine sandy loam, or loam with 0 to 10 percent pebbles.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 1 to 3 dry or moist. It is stratified loamy fine sand to silt loam with 0 to 15 percent pebbles. Mottles are below a depth of 40 inches in some pedons.

Quincy Series

The Quincy series consists of very deep, excessively drained soils on outwash terraces, dunes, and alluvial fans. These soils formed in eolian sand and glacial outwash sand. Slopes are 0 to 60 percent. Elevation is 800 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Quincy loamy fine sand, 0 to 10 percent slopes, about 6 miles east of Coulee Dam; 3,200 feet south and 200 feet east of the northwest corner of sec. 31, T. 29 N., R. 32 E., W.M.:

A—0 to 5 inches; grayish brown (10YR 5/2) loamy fine sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, nonsticky and nonplastic; many very fine and common fine roots; mildly alkaline; clear smooth boundary.

C1—5 to 28 inches; brown (10YR 5/3) loamy fine sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic common very fine and few fine roots; moderately alkaline; gradual smooth boundary.

C2—28 to 44 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.

C3—44 to 52 inches; light brownish gray (10YR 6/2) loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; violently effervescent; few soft masses of secondary lime; moderately alkaline; clear smooth boundary.

C4—52 to 60 inches; multicolored coarse sand; single grain; loose, nonsticky and nonplastic; few very fine roots; slightly effervescent; moderately alkaline.

The particle-size control section is 0 to 5 percent clay and less than 75 percent very coarse, coarse, and medium sand. The organic matter content in the surface layer is less than 1 percent when mixed.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is sand, loamy sand, fine sand, or loamy fine sand. It is neutral or mildly alkaline. This horizon is absent in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is dominantly sand, fine sand, loamy fine sand, or loamy sand, but it is coarse sand below a depth of 40 inches in some pedons. The horizon is dominantly 0 to 5 percent pebbles, but in detailed soil map unit 363 some parts of this horizon are 15 to 25 percent pebbles and 0 to 5 percent cobbles. The C horizon is neutral to moderately alkaline.

Raisio Series

The Raisio series consists of moderately deep, well drained soils on ridges, shoulders, and backslopes of hills and mountains. These soils formed in colluvium and residuum derived from metamorphic rock with an admixture of volcanic ash and loess. Slopes are 8 to 65 percent. Elevation is 1,900 to 4,700 feet. The average annual precipitation is 15 to 22 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Raisio channery loam, dry, 40 to 65 percent slopes, about 23 miles northeast of Nespelem; 900 feet west and 2,600 feet north of the southeast corner of sec. 1, T. 34 N., R. 31 E., W.M.:

Oi—1 inch to 0; needles, twigs, bark, and cones.

A1—0 to 5 inches; grayish brown (10YR 5/2) channery loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine irregular pores; 25 percent channers; neutral; clear smooth boundary.

A2—5 to 12 inches; grayish brown (10YR 5/2) very channery loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and few medium

roots; many very fine irregular pores; 40 percent channers; neutral; clear wavy boundary.

Bw—12 to 28 inches; grayish brown (2.5Y 5/2) very channery loam, dark grayish brown (2.5Y 4/2) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and common fine roots; few fine tubular pores; 50 percent channers; slightly acid; abrupt wavy boundary.

R—28 to 32 inches; phyllite bedrock.

Depth to bedrock is 20 to 40 inches. The profile is neutral or slightly acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. The upper part is 15 to 25 percent channers and 0 to 5 percent flagstones, and the lower part is loam or sandy loam with 20 to 50 percent channers and 0 to 25 percent flagstones.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 20 to 50 percent channers and 0 to 25 percent flagstones.

The C horizon, where present, has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry and 2 to 4 moist. It is loam or sandy loam with 35 to 80 percent rock fragments, including 20 to 50 percent channers and 5 to 40 percent flagstones.

The Raisio soils in this survey area are a taxadjunct to the Raisio series because they are classified as Ultic Haploxerolls and the series is classified as Entic Ultic Haploxerolls. This difference, however, does not significantly affect use and management.

Ralsen Series

The Ralsen series consists of very deep, poorly drained soils on flood plains and low stream terraces. These soils formed in alluvium of mixed mineralogy. Slopes are 0 to 3 percent. Elevation is 1,700 to 2,600 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Ralsen silt loam, 0 to 3 percent slopes, about 8 miles north of Nespelem; 300 feet north and 1,800 feet east of the southwest corner of sec. 17, T. 32 N., R. 31 E., W.M.:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; strong medium and coarse granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 2 percent rounded pebbles; neutral; clear smooth boundary.

A—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine irregular pores; 2 percent rounded pebbles; neutral; clear smooth boundary.

Cg1—11 to 20 inches; light gray (10YR 7/2) sandy loam, dark grayish brown (10YR 4/2) moist; few fine prominent mottles that are yellowish red (5YR 5/6) when moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 5 percent rounded pebbles; neutral; abrupt smooth boundary.

Cg2—20 to 26 inches; light gray (10YR 7/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; common fine prominent mottles that are yellowish red (5YR 5/6) when moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; neutral; clear smooth boundary.

Cg3—26 to 42 inches; white (10YR 8/1) fine sandy loam, light gray (10YR 7/2) moist; common medium prominent mottles that are strong brown (7.5YR 5/6) when moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; neutral; abrupt smooth boundary.

2C—42 to 60 inches; brown (10YR 5/4) gravelly coarse sandy loam, dark brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 20 percent rounded pebbles; neutral.

These soils are saturated in winter and spring. The particle-size control section is 0 to 15 percent pebbles by weighted average. The mollic epipedon is 10 to 20 inches thick. The profile is slightly acid or neutral. An apparent water table is present in December through August. Occasional periods of flooding occur in March through May.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist. It is 0 to 5 percent pebbles.

The Cg horizon has value of 5 to 8 dry and 4 to 7 moist, and it has chroma of 1 or 2 dry or moist. It is stratified silt loam to sandy loam with 0 to 10 percent pebbles.

The 2C horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is stratified fine sandy loam to sand with 0 to 25 percent pebbles.

Ratlake Series

The Ratlake series consists of soils that are shallow to a duripan and are poorly drained. These soils are in closed depressions on valley flats. They formed in glacial lake sediment with some additions of recent alluvium. Slopes are 0 to 2 percent. Elevation is 1,100 to 1,350 feet. The average annual precipitation is 9 to 11 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Ratlake silty clay loam, 0 to 2 percent slopes, about 16 miles west of Nespelem; 850 feet south and 250 feet west of the northeast corner of sec. 5, T. 30 N., R. 28 E., W.M.:

Bgkzn1—0 to 2 inches; light gray (10YR 7/1) silty clay loam, gray (10YR 6/1) moist; massive; very hard, very firm, very sticky and very plastic; common very fine and fine roots; few fine tubular pores; common masses of lime; violently effervescent; very strongly alkaline; clear wavy boundary.

Bgkzn2—2 to 18 inches; gray (10YR 6/1) silty clay loam, gray (10YR 5/1) moist; massive; very hard, very firm, very sticky and very plastic; few very fine and fine roots; few fine tubular pores; common masses of lime; violently effervescent; very strongly alkaline; clear wavy boundary.

Bkqm—18 to 22 inches; light gray (10YR 7/1), lime- and silica-cemented, indurated duripan that crushes to loam, gray (10YR 6/1) moist; massive; extremely hard, extremely firm, slightly sticky and slightly plastic when crushed; violently effervescent; very strongly alkaline.

Depth to the duripan is 10 to 20 inches. The particle-size control section is 22 to 35 percent clay. A perched water table is present in January through July. These soils are ponded in March through May.

The Bgkzn horizon has hue of 10YR or 2.5Y and value of 6 or 7 dry and 4 to 6 moist. It is silt loam or silty clay loam with 0 to 10 percent hard durinodes.

The Bkqm horizon has hue of 10YR or 2.5Y and value of 7 or 8 dry and 5 or 6 moist.

Reardan Series

The Reardan series consists of very deep, well drained soils on plateaus and broad summits of hills. These soils formed in loess. Slopes are 0 to 15 percent. Elevation is 2,500 to 2,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Reardan silt loam, 0 to 8 percent slopes, about 6 miles northeast of North Keller Ferry Landing; 1,200 feet east and 100 feet north of the southwest corner of sec. 31, T. 29 N., R. 34 E., W.M.:

Oi—1 inch to 0; needles and twigs.

A1—0 to 4 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic, common very fine, fine, and medium roots; common very fine tubular pores; neutral; clear smooth boundary.

A2—4 to 11 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine irregular pores; neutral; clear smooth boundary.

E—11 to 22 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate medium angular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine, fine, medium, and coarse roots; many very fine irregular pores; neutral; clear smooth boundary.

Bt/E—22 to 38 inches; 60 percent brown (7.5YR 5/4) silty clay brown (B part), dark yellowish brown (10YR 3/4) moist, and 40 percent pale brown (10YR 6/3) silt loam (E part), brown (10YR 4/3) moist; moderate medium angular blocky structure parting to fine angular blocky; very hard, firm, sticky and plastic; few very fine, fine, and medium roots; many very fine irregular pores; many faint clay films on faces of peds and lining pores; neutral; gradual smooth boundary.

Bt—38 to 51 inches; brown (7.5YR 5/4) silty clay, dark brown (7.5YR 4/4) moist; moderate medium angular blocky structure; very hard, firm, sticky and plastic; few very fine and fine roots; many very fine irregular pores; many faint clay films on faces of peds and lining pores; neutral; gradual smooth boundary.

Btk—51 to 60 inches; light brown (7.5YR 6/4) silty clay loam, brown (7.5YR 5/4) moist; weak medium angular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; many very fine irregular pores; common faint clay films on faces of peds and lining pores; few fine soft masses of secondary carbonates; slightly effervescent; mildly alkaline.

The mollic epipedon is 10 to 15 inches thick. Depth to secondary carbonates is 45 to 60 inches or more. The particle-size control section is 35 to 45 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is slightly acid or neutral.

The E horizon is silt loam or silty clay loam.

The Bt part of the Bt/E horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 4 to 6 dry or moist. The E part has chroma of 3 or 4 dry or moist.

The Bt horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 4 or 5 moist, and chroma of 4 to 6 dry or moist. It is silty clay loam, clay, or silty clay. It is neutral or moderately alkaline.

The Btk horizon has color similar to that of the Bt horizon. The Btk horizon is silt loam or silty clay loam. It is mildly alkaline or moderately alkaline.

The Reardon soils in this survey area are a taxadjunct to the Reardon series because they are classified as Typic Argixerolls and the series is classified as Calcic Argixerolls. This difference, however, does not significantly affect use and management.

Rebecca Series

The Rebecca series consists of very deep, well drained soils on alluvial fans. These soils formed in alluvium of mixed mineralogy. Slopes are 0 to 15 percent. Elevation is 1,200 to 2,600 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Rebecca gravelly sandy loam, 3 to 15 percent slopes, about 4 miles northeast of Coulee Dam; 1,800 feet east and 1,200 feet south of the northwest corner of sec. 27, T. 29 N., R. 31 E., W.M.:

A1—0 to 9 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure parting to weak fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 20 percent pebbles; neutral; clear smooth boundary.

A2—9 to 15 inches; grayish brown (10YR 5/2) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and fine roots; many very fine irregular pores; 30 percent pebbles; neutral; clear smooth boundary.

Bw1—15 to 29 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and fine roots; few fine tubular pores; 20 percent pebbles; neutral; clear smooth boundary.

Bw2—29 to 45 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine roots; few fine tubular pores; 20 percent pebbles; neutral; clear wavy boundary.

C—45 to 60 inches; light yellowish brown (10YR 6/4) gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 30 percent pebbles; neutral.

The mollic epipedon is 12 to 18 inches thick. The particle-size control section is 15 to 35 percent rock fragments and 5 to 15 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is gravelly sandy loam or fine sandy loam with 0 to 30 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or fine sandy loam with 15 to 35 percent pebbles. It is neutral or mildly alkaline.

The C horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam, fine sandy loam, or coarse sandy loam with 15 to 35 percent pebbles. It is neutral or mildly alkaline.

Renha Series

The Renha series consists of moderately deep, well drained soils on benches, shoulders, and footslopes of hills and mountains. These soils formed in residuum and colluvium derived from limestone, marble, and dolomite with a mantle of volcanic ash and loess. Slopes are 5 to 40 percent. Elevation is 2,300 to 3,800 feet. The average annual precipitation is 20 to 22 inches, the average annual air temperature is 42 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Renha silt loam in an area of Renha, warm-Oxerine silt loams complex, 20 to 40 percent slopes, about 12 miles northeast of Keller; 1,450 feet south and 2,150 feet west of the northeast corner of sec. 5, T. 31 N., R. 34 E., W.M.:

Oi—1 inch to 0; needles, leaves, grass, and twigs.

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

fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine irregular pores; 2 percent pebbles; neutral; abrupt wavy boundary.

Bw—2 to 7 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine granular and subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; common very fine tubular pores; 3 percent pebbles; neutral; abrupt wavy boundary.

2E/Bt—7 to 11 inches; very pale brown (10YR 7/3) silt loam (E part), brown (10YR 5/3) moist; light yellowish brown (10YR 6/4) silty clay loam (B part), brown (7.5YR 4/4) moist; moderate medium angular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common very fine tubular pores; common faint clay films on faces of peds; 2 percent pebbles; slightly acid; abrupt smooth boundary.

2Bt1—11 to 22 inches; reddish brown (5YR 4/3) clay, dark reddish brown (5YR 3/3) dry; strong coarse prismatic structure parting to strong medium angular blocky; extremely hard, very firm, sticky and very plastic; few very fine and fine roots; few fine tubular pores; continuous distinct clay films on faces of peds; 5 percent pebbles; neutral; clear wavy boundary.

2Bt2—22 to 28 inches; reddish brown (5YR 4/3) and reddish yellow (7.5YR 6/6) gravelly clay loam, dark reddish brown (5YR 3/3 and 5YR 3/2) and strong brown (7.5YR 4/6) moist; strong medium and coarse angular blocky structure; extremely hard, very firm, very sticky and plastic; few very fine, fine, and coarse roots; few fine tubular pores; many distinct clay films on faces of peds; 15 percent hard pebbles and 5 percent soft pebbles; mildly alkaline; clear wavy boundary.

2R—28 to 32 inches; limestone bedrock.

The mantle of volcanic ash is 7 to 14 inches thick. Depth to bedrock is 20 to 40 inches. The particle-size control section is 35 to 50 percent clay and 0 to 20 percent rock fragments.

The A horizon has value of 2 or 3 moist. It is 0 to 10 percent pebbles.

The Bw horizon has hue of 7.5YR or 10YR, value of 5 to 7 dry and 3 to 5 moist, and chroma of 3 or 4 dry or moist. It is 0 to 15 percent pebbles and 0 to 10 percent cobbles. It is slightly acid or neutral.

The E part of the 2E/Bt horizon has value of 6 or 7 dry and 3 or 4 moist. Color of the Bt part is similar to that of the 2Bt horizon. The Bt part is clay loam with 2 to 15 percent pebbles and 0 to 10 percent cobbles.

The 2Bt horizon has hue of 5YR, 7.5YR, or 10YR, value of 3 to 6 dry and 3 to 5 moist, and chroma of 3 to 6 dry and 2 to 6 moist. It is clay or clay loam with 5 to 15 percent pebbles and 0 to 5 percent cobbles. It is neutral or mildly alkaline.

Republic Series

The Republic series consists of very deep, well drained soils on alluvial fans and on toeslopes, footslopes, and backslopes of hills and mountains. These soils formed in alluvium and glacial till with a component of loess and volcanic ash. Slopes are 3 to 65 percent. Elevation is 1,700 to 3,500 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Republic loam, 30 to 65 percent slopes, about 3 miles northwest of Nespelem; 800 feet north and 1,000 feet east of the southwest corner of sec. 11, T. 31 N., R. 30 E., W.M.:

Oi—1 inch to 0; needles, twigs, bark, cones, and leaves.

A1—0 to 5 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and few medium roots; common very fine and fine interstitial pores; 10 percent pebbles; neutral; clear wavy boundary.

A2—5 to 11 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common very fine and fine interstitial pores; 20 percent pebbles; neutral; clear wavy boundary.

Bw—11 to 16 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, medium, and coarse roots; common very fine and few fine interstitial pores; 20 percent pebbles; neutral; clear wavy boundary.

C1—16 to 38 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; massive; soft, very friable, slightly sticky and nonplastic; common very fine, fine, medium, and coarse roots; common very fine and few fine interstitial pores; 25 percent pebbles; neutral; clear wavy boundary.

C2—38 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and nonplastic; common very fine, fine, and medium roots; common very fine and fine interstitial pores; 35 percent pebbles and 5 percent cobbles; neutral.

The mollic epipedon is 12 to 20 inches thick. The particle-size control section is 5 to 35 percent rock fragments. It is slightly acid or neutral.

The A1 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is 5 to 15 percent pebbles.

The A2 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam, loam, or sandy loam with 5 to 25 percent pebbles.

The Bw horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loam, sandy loam, or silt loam with 5 to 20 percent pebbles and 0 to 5 percent cobbles and stones.

The C1 horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is loam, sandy loam, or silt loam with 15 to 30 percent pebbles and 0 to 5 percent cobbles and stones.

The C2 horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 20 to 45 percent pebbles and 0 to 5 percent cobbles.

Resner Series

The Resner series consists of very deep, well drained soils on outwash terraces, terrace escarpments, and toeslopes and footslopes of mountains. These soils formed in a mantle of volcanic ash over glacial outwash and ablation till derived from granitic rock. Slopes are 0 to 40 percent. Elevation is 3,500 to 5,200 feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 39 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Resner loam, 0 to 20 percent slopes, about 17 miles north of Nespelem; 1,200 feet west and 1,000 feet south of the northeast corner of sec. 31, T. 34 N., R. 31 E., W.M.:

Oi—1.5 inches to 0.5 inch; needles, leaves, and twigs.
Oe—0.5 inch to 0; partially decomposed litter.
A—0 to 5 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, medium, and coarse roots; many very fine irregular pores; slightly acid; clear wavy boundary.
Bw—5 to 17 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common very fine tubular pores; 2 percent pebbles; neutral; abrupt smooth boundary.
2C1—17 to 34 inches; white (10YR 8/2) very gravelly loamy sand, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 40 percent pebbles and 5 percent cobbles; neutral; gradual smooth boundary.
2C2—34 to 60 inches; white (10YR 8/2) extremely gravelly loamy sand, pale brown (10YR 6/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 50 percent pebbles and 10 percent cobbles; neutral.

The mantle of volcanic ash is 14 to 25 inches thick. It is slightly acid or neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is 0 to 5 percent pebbles. Some pedons have a discontinuous 2-inch-thick surface layer of Mt. St. Helens “T” ash. It has value of 6 or 7 dry and 4 or 5 moist and chroma of 1 to 3 dry and 2 or 3 moist.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 to 6 dry or moist. It is loam or silt loam with 0 to 15 percent pebbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 7 or 8 dry and 5 or 6 moist, and chroma of 2 or 3 dry or moist. It is loamy sand, sand, or coarse sand with 40 to 65 percent pebbles, 0 to 30 percent cobbles, and 0 to 2 percent stones.

Ret Series

The Ret series consists of very deep, somewhat poorly drained soils on flood plains and low stream terraces. These soils formed in recent alluvium of mixed mineralogy. Slopes are 0 to 3 percent. Elevation is 1,600 to 3,800 feet. The average annual precipitation is 15 to 20 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Ret silt loam, 0 to 3 percent slopes, about 8 miles northeast of Disautel; 1,500 feet

north and 1,500 feet west of the southeast corner of sec. 19, T. 34 N., R. 30 E., W.M.:

A1—0 to 8 inches; very dark gray (10YR 3/1) silt loam, black (10YR 2/1) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine irregular pores; mildly alkaline; clear wavy boundary.

A2—8 to 16 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine irregular pores; 2 percent rounded pebbles; mildly alkaline; gradual wavy boundary.

A3—16 to 22 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 2 percent rounded pebbles; neutral; clear wavy boundary.

Bw—22 to 30 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 9/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 5 percent rounded pebbles; neutral; clear wavy boundary.

C1—30 to 36 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; common fine faint mottles that are dark yellowish brown (10YR 4/4) when moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 10 percent rounded pebbles; neutral; clear wavy boundary.

C2—36 to 60 inches; very pale brown (10YR 7/3) loamy sand, brown (10YR 5/3) moist; common medium distinct mottles that are yellowish brown (10YR 5/6) when moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 10 percent rounded pebbles; neutral.

The mollic epipedon is 20 to 34 inches thick. Depth to the sandy substratum is 25 to 60 inches or more. The particle-size control section is 6 to 17 percent clay and 3 to 15 percent rock fragments. The profile is mildly alkaline or neutral. An apparent water table is present in December through July. Occasional periods of flooding occur in February through May.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist. The lower part is silt loam, fine sandy loam, or loam with 0 to 10 percent pebbles.

The AC horizon, where present, has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam, fine sandy loam, or loam with 0 to 15 percent pebbles.

The Bw horizon is stratified silt loam to sandy loam with 0 to 15 percent pebbles. This horizon is absent in some pedons.

The C horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is stratified silt loam to gravelly coarse sand with 0 to 20 percent pebbles.

Roosevelt Series

The Roosevelt series consists of moderately deep, well drained soils on ridges, shoulders, and backslopes of hills. These soils formed in residuum and colluvium derived from granitic rock with a component of loess. Slopes are 5 to 65 percent. Elevation is 1,300 to 2,400 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Roosevelt gravelly loam in an area of Roosevelt-Soaplake-Rock outcrop complex, 5 to 30 percent slopes, about 1 mile southeast of Coulee Dam; 2,100 feet south and 1,600 feet east of the northwest corner of sec. 5, T. 28 N., R. 31 E., W.M.:

A1—0 to 3 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; few very fine interstitial pores; 20 percent pebbles; neutral; clear wavy boundary.

A2—3 to 14 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; common very fine roots and few fine and medium roots; few very fine interstitial pores; 15 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

Bw—14 to 28 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few very fine and fine roots; few very fine interstitial pores; 15 percent pebbles and 5 percent cobbles; neutral; gradual irregular boundary.

R—28 to 32 inches; granitic bedrock.

The mollic epipedon is 9 to 16 inches thick. Depth to bedrock is 20 to 40 inches. The particle-size control

section is 5 to 30 percent rock fragments. It is neutral or mildly alkaline.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 15 to 30 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or fine sandy loam with 10 to 30 percent pebbles and 0 to 10 percent cobbles.

A thin Cr horizon is directly above the bedrock in some pedons.

Rufus Series

The Rufus series consists of shallow, well drained soils on shoulders, backslopes, and ridges of hills and mountains. These soils formed in residuum and colluvium derived from metamorphic rock with an admixture of volcanic ash and loess. Slopes are 8 to 65 percent. Elevation is 1,900 to 4,700 feet. The average annual precipitation is 15 to 22 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Rufus channery loam in an area of Raisio, dry-Rufus-Rock outcrop complex, 30 to 65 percent slopes, about 10 miles north of Nespelem; 1,800 feet north and 550 east of the southwest corner of sec. 31, T. 33 N., R. 31 E., W.M.:

A1—0 to 5 inches; brown (10YR 4/3) channery loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and few medium roots; common very fine tubular pores; 25 percent channers and 5 percent flagstones; neutral; clear wavy boundary.

A2—5 to 15 inches; brown (10YR 4/3) very channery loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and few medium roots; common very fine tubular pores; 35 percent channers and 10 percent flagstones; neutral; abrupt wavy boundary.

R—15 to 19 inches; schist bedrock.

Depth to bedrock is 10 to 20 inches. The particle-size control section is 35 to 75 percent rock fragments and 8 to 15 percent clay. It is slightly acid or neutral.

The A1 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 35 percent channers and 0 to 5 percent flagstones.

The A2 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loam or sandy loam with 35 to 50 percent channers and 5 to 20 percent flagstones.

The Bw horizon, where present, has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam with 35 to 50 percent channers and 5 to 20 percent flagstones.

Sacheen Series

The Sacheen series consists of very deep, somewhat excessively drained soils on terraces, kames, and terrace escarpments. These soils formed in sandy glacial outwash. Slopes are 0 to 70 percent. Elevation is 1,700 to 4,600 feet. The average annual precipitation is 16 to 20 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Sacheen loamy fine sand, dry, 0 to 20 percent slopes, about 5 miles northwest of Nespelem; 1,900 feet south and 2,000 feet west of the northeast corner of sec. 35, T. 32 N., R. 30 E., W.M.:

Oi—1.5 inches to 0; needles, twigs, leaves, and bark.

A—0 to 4 inches; dark grayish brown (10YR 4/2) loamy fine sand, very dark gray (10YR 3/1) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine irregular pores; 5 percent pebbles; slightly acid; clear wavy boundary.

C1—4 to 20 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots and few coarse roots; common very fine tubular pores; 5 percent pebbles; slightly acid; gradual wavy boundary.

C2—20 to 60 inches; light gray (10YR 7/2) gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine, medium, and coarse roots; common very fine tubular pores; 15 percent pebbles; neutral.

The particle-size control section is 3 to 8 percent clay and 5 to 25 percent pebbles. It is neutral or slightly acid.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist. It is loamy fine sand or loamy sand with 0 to 10 percent pebbles.

An AC horizon is present in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is sand, loamy sand, or loamy fine sand with 5 to 25 percent pebbles.

Sanpoil Series

The Sanpoil series consists of very deep, poorly drained and very poorly drained soils on flood plains and low stream terraces. These soils formed in recent alluvium of mixed mineralogy. Slopes are 0 to 2 percent. Elevation is 1,600 to 3,800 feet. The average annual precipitation is 15 to 20 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Sanpoil silt loam, 0 to 2 percent slopes, about 22 miles northeast of Nespelem; 2,100 feet north and 1,100 feet west of the southeast corner of sec. 14, T. 34 N., R. 32 E., W.M.:

Ap—0 to 12 inches; dark grayish brown (10YR 4/2) silt loam, very dark gray (10YR 3/1) moist; common fine distinct mottles that are dark yellowish brown (10YR 4/4) when moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine and fine irregular pores; neutral; clear wavy boundary.

A—12 to 28 inches; dark grayish brown (10YR 4/2) loam, very dark gray (10YR 3/1) moist; common fine faint mottles that are dark yellowish brown (10YR 4/4) when moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine and fine irregular pores; 5 percent fine pebbles; neutral; abrupt wavy boundary.

AC—28 to 31 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; many fine distinct mottles that are dark yellowish brown (10YR 4/4) when moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine and fine irregular pores; 5 percent fine pebbles; neutral; abrupt wavy boundary.

Ab—31 to 41 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; common fine faint mottles that are dark brown (10YR 3/3) when moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine and fine irregular pores; 5 percent fine pebbles; neutral; abrupt wavy boundary.

2C—41 to 60 inches; multicolored very gravelly sand; single grain; loose, nonsticky and nonplastic; 40 percent pebbles and 10 percent cobbles; neutral.

These soils are saturated in the moisture control section from winter to late in spring. The mollic epipedon is 24 to 37 inches thick. The particle-size control section is 5 to 18 percent clay and 0 to 15 percent rock fragments. A seasonal high water table is 6 inches above the surface to a depth of 18 inches below the surface in February through June. Occasional, brief periods of flooding occur in March through June. The profile is slightly acid or neutral.

The Ap and A horizons have value of 4 or 5 dry and 2 or 3 moist, and they have chroma of 1 or 2 dry or moist. The A horizon is silt loam or loam with 0 to 15 percent pebbles.

The AC horizon has hue of 10YR, 2.5Y, or 5Y, value of 4 to 6 dry and 2 or 3 moist, and chroma of 1 to 3 dry or moist. It is stratified silt loam to sandy loam with 0 to 20 percent pebbles. This horizon is absent in some pedons.

The Ab horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist. It is stratified silt loam to sandy loam with 0 to 20 percent pebbles.

The 2C horizon is multicolored. It is stratified sandy loam to sand with 5 to 50 percent pebbles and 0 to 10 percent cobbles. This horizon is absent in some pedons.

Scala Series

The Scala series consists of very deep, well drained soils on terraces. These soils formed in sandy glacial outwash mixed with volcanic ash and loess. Slopes are 0 to 5 percent. Elevation is 1,400 to 2,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Scala very fine sandy loam, 0 to 5 percent slopes, about 6 miles northwest of Inchelium; 1,850 feet west and 500 feet south of the northeast corner of sec. 13, T. 33 N., R. 36 E., W.M.:

Oi—1 inch to 0; needles, leaves, and twigs.

A—0 to 6 inches; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular pores; neutral; clear smooth boundary.

AB—6 to 13 inches; pale brown (10YR 6/3) very fine sandy loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few coarse roots; common very fine tubular pores; neutral; gradual smooth boundary.

Bw1—13 to 28 inches; pale brown (10YR 6/3) very

fine sandy loam, dark yellowish brown (10YR 4/4) moist; few fine faint (7.5YR 4/6) stains; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few coarse roots; few fine tubular pores; neutral; gradual smooth boundary.

Bw2—28 to 60 inches; light brownish gray (2.5Y 6/2) very fine sandy loam, olive brown (2.5Y 4/4) moist; many fine faint (7.5YR 4/4) stains; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few coarse roots; few fine tubular pores; neutral.

The particle-size control section is 5 to 10 percent clay. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 or 2 moist.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is very fine sandy loam or fine sandy loam.

Sclome Series

The Sclome series consists of very deep, poorly drained soils on valley flats. These soils formed in alluvium overlying volcanic ash and valley fill. Slopes are 0 to 3 percent. Elevation is 2,400 to 2,700 feet. The average annual precipitation is 18 to 20 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Sclome silty clay loam, 0 to 3 percent slopes, about 6.5 miles east of Keller; 700 feet south and 1,400 feet west of the northeast corner of sec. 29, T. 30 N., R. 34 E., W.M.:

Ap—0 to 13 inches; very dark gray (10YR 3/1) silty clay loam, black (N 2/0) moist; strong fine and medium subangular blocky structure parting to strong fine granular; hard, firm, sticky and plastic; many very fine, common fine, and few medium roots; common very fine tubular pores; slightly acid; abrupt smooth boundary.

2Bw—13 to 18 inches; grayish brown (10YR 5/2) and pale brown (10YR 6/3) silt loam, very dark grayish brown (10YR 3/2) and brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; pressure faces on faces of peds and in root channels; neutral; clear wavy boundary.

3BAgb—18 to 28 inches; grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) clay loam, very dark grayish brown (2.5Y 3/2) and dark grayish brown (2.5Y 4/2) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; few very fine and fine roots; many very fine irregular pores; pressure faces on faces of peds and in root channels; neutral; clear wavy boundary.

3Bgb—28 to 50 inches; light brownish gray (2.5Y 6/2) and light gray (2.5Y 7/2) sandy loam, grayish brown (2.5Y 5/2) moist; common medium distinct mottles that are light olive brown (2.5Y 5/4) when moist and common medium prominent mottles that are dark yellowish brown (10YR 4/4) when moist; weak medium angular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; neutral; clear wavy boundary.

3Cg—50 to 60 inches; light gray (2.5Y 7/2) and (5Y 7/2) silty clay loam, dark grayish brown (2.5Y 4/2) and olive (5Y 5/3) moist; many medium distinct mottles that are yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) when moist and common fine distinct mottles that are dark brown (7.5Y 3/4) when moist; massive; hard, firm, sticky and plastic; neutral.

The mollic epipedon is 10 to 24 inches thick. The particle-size control section is 22 to 35 percent clay and 0 to 5 percent fine pebbles. The profile is slightly acid or neutral. An apparent water table is present in February through June. Occasional periods of flooding occur in March through May.

The Ap or A horizon has hue of 10YR, or it is neutral. The horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 0 to 3 dry or moist. In some areas this horizon is overlain by a thin C horizon of recent alluvium 1 to 3 inches thick or by an Oa horizon 1 to 4 inches thick.

The 2Bw horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry, and chroma of 2 to 4 dry or moist.

The 3BAgb horizon has value of 5 or 6 dry and 3 or 4 moist. It is clay loam or silty clay loam.

The 3Bgb horizon has value of 4 or 5 moist. It is stratified sandy loam to silty clay loam.

The 3Cg horizon has hue of 2.5Y or 5Y, value of 5 to 7 dry and 3 or 4 moist, and chroma of 1 to 3 dry or moist. It is stratified loamy sand to silty clay loam with 0 to 10 percent fine pebbles.

Scoap Series

The Scoap series consists of very deep, well drained soils on toeslopes, footslopes, and backslopes of hills and mountains and on alluvial fans. These soils formed in colluvium, glacial till, and slope alluvium derived from volcanic and metamorphic rock with a

component of volcanic ash and loess. Slopes are 5 to 65 percent. Elevation is 1,600 to 4,800 feet. The average annual precipitation is 18 to 22 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Scoap gravelly loam, 20 to 40 percent slopes, about 12 miles north of Nespelem; 1,900 feet north and 120 feet east of the southwest corner of sec. 27, T. 33 N., R. 31 E., W.M.:

Oi—1 inch to 0; needles, twigs, and cones.
A—0 to 14 inches; dark brown (10YR 4/3) gravelly loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; few fine tubular pores; 20 percent pebbles; neutral; clear irregular boundary.
Bw1—14 to 22 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; few fine tubular pores; 30 percent pebbles; neutral; clear irregular boundary.
Bw2—22 to 36 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine roots and few fine and medium roots; few fine tubular pores; 40 percent pebbles; neutral; clear wavy boundary.
C—36 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 40 percent pebbles and 5 percent cobbles; neutral.

The mollic epipedon is 20 to 30 inches thick. The particle-size control section is 8 to 12 percent clay and 35 to 50 percent rock fragments. It is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 to 3 dry or moist. It is gravelly loam or silt loam with 5 to 30 percent pebbles.

The Bw horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loam, silt loam, or sandy loam with 20 to 40 percent pebbles and 0 to 30 percent cobbles.

The C horizon has value of 6 or 7 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam or sandy loam with 20 to 45 percent pebbles, 5 to 30 percent cobbles, and 0 to 15 percent stones. This horizon is absent in some pedons.

Scrabblers Series

The Scrabblers series consists of very deep, well drained soils on terraces, terrace escarpments, and toeslopes, footslopes, and backslopes of hills and mountains. These soils formed in sandy glacial outwash with a mantle of volcanic ash. Slopes are 0 to 40 percent. Elevation is 2,600 to 4,600 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 41 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Scrabblers silt loam, dry, 0 to 20 percent slopes, about 13 miles northwest of Inchelium; 1,500 feet south and 2,300 feet west of the northeast corner of sec. 14, T. 34 N., R. 35 E., W.M.:

Oi—2 inches to 0; needles, leaves, and twigs.
A—0 to 3 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium roots; many very fine irregular pores; slightly acid (NaF pH 10.0); clear smooth boundary.
Bw—3 to 11 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and medium roots and few coarse roots; many very fine irregular pores; 5 percent pebbles; slightly acid (NaF pH 10.0); clear wavy boundary.
2C1—11 to 24 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and medium roots; common very fine tubular pores; 20 percent pebbles and 5 percent cobbles; neutral; gradual wavy boundary.
2C2—24 to 37 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; common very fine tubular pores; 20 percent pebbles and 10 percent cobbles; neutral; clear smooth boundary.
2C3—37 to 60 inches; brown (10YR 5/3) gravelly coarse sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few fine tubular pores; 20 percent pebbles; neutral.

The mantle of volcanic ash is 7 to 14 inches thick. The particle-size control section is 1 to 6 percent clay and 5 to 35 percent rock fragments. It is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 to 4

moist, and it has chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles. It is loam or silt loam.

The Bw horizon has value of 5 or 6 dry and 3 to 5 moist, and it has chroma of 3 or 4 moist. It is silt loam, loam, or sandy loam with 5 to 15 percent pebbles and 0 to 5 percent cobbles.

The 2C1 horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 to 4 dry or moist. It is sandy loam or loamy sand with 10 to 30 percent pebbles and 0 to 10 percent cobbles.

The 2C2 and 2C3 horizons have hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. They are loamy sand, loamy coarse sand, coarse sand, or sand with 10 to 30 percent pebbles and 0 to 10 percent cobbles.

Sitdown Series

The Sitdown series consists of very deep, well drained soils on backslopes of mountains and terrace escarpments. These soils formed in glacial outwash with a mantle of volcanic ash. Slopes are 40 to 70 percent. Elevation is 2,800 to 4,600 feet. The average annual precipitation is 20 to 25 inches, the average annual air temperature is 39 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Sitdown gravelly loam, 40 to 70 percent slopes, about 16 miles north of Nespelem; 1,200 feet south and 2,200 feet east of the northwest corner of sec. 2, T. 33 N., R. 31 E., W.M.:

Oi—2.5 to 2.0 inches; needles, twigs, and cones.

Oe—2 inches to 0; moderately decomposed forest litter.

A—0 to 4 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots and few coarse roots; many very fine irregular pores; 20 percent rounded pebbles; slightly acid; clear wavy boundary.

Bw—4 to 13 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 9/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots and few coarse roots; common very fine tubular pores; 20 percent rounded pebbles; slightly acid; abrupt wavy boundary.

2C1—13 to 29 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots and few medium roots; few fine tubular pores; 35 percent rounded pebbles and 15 percent cobbles; neutral; clear wavy boundary.

2C2—29 to 60 inches; light brownish gray (10YR 6/2) very gravelly sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 35 percent rounded pebbles and 15 percent cobbles; neutral.

The mantle of volcanic ash is 10 to 14 inches thick. The particle-size control section is 35 to 60 percent rock fragments. It is neutral or slightly acid.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is 15 to 30 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is 15 to 30 percent pebbles and 0 to 5 percent cobbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 to 6 moist, and chroma of 1 to 3 dry or moist. It is loamy sand or sand with 20 to 40 percent pebbles, 10 to 20 percent cobbles, and 0 to 5 percent stones.

Skaha Series

The Skaha series consists of very deep, excessively drained soils on terraces and terrace escarpments. These soils formed in glacial outwash. Slopes are 0 to 65 percent. Elevation is 800 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Skaha loamy sand, 0 to 10 percent slopes, about 2.5 miles southwest of Malott; 1,150 feet south and 1,650 feet east of the northwest corner of sec. 29, T. 32 N., R. 25 E., W.M.:

A—0 to 7 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

C1—7 to 19 inches; light yellowish brown (10YR 6/4) gravelly loamy sand, brown (10YR 4/3) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots and few fine and medium roots; common very fine tubular pores; 15 percent pebbles; neutral; clear wavy boundary.

C2—19 to 35 inches; pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few

very fine roots; common very fine tubular pores; 50 percent pebbles and 10 percent cobbles; neutral; clear smooth boundary.

C3—35 to 60 inches; multicolored extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 55 percent pebbles and 10 percent cobbles; neutral.

The particle-size control section is 40 to 75 percent rock fragments. It is neutral or mildly alkaline.

The A horizon has value of 4 to 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is loamy sand, gravelly loamy sand, extremely gravelly loamy sand, or very stony sandy loam with 0 to 50 percent pebbles, 0 to 20 percent cobbles, and 0 to 15 percent stones.

The upper part of the C horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 1 to 4 dry or moist. The lower part is multicolored. The horizon is loamy sand, loamy coarse sand, sand, or coarse sand. The upper part is 15 to 50 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones, and the lower part is 30 to 60 percent pebbles, 0 to 35 percent cobbles, and 0 to 5 percent stones.

Skanid Series

The Skanid series consists of shallow, well drained soils on ridges, summits, shoulders, and backslopes of hills and mountains (fig. 23). These soils formed in colluvium and residuum derived from granitic rock with a minor component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 1,700 to 4,200 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Skanid gravelly sandy loam, warm, 20 to 40 percent slopes, about 5 miles northeast of Elmer City; 2,300 feet west and 100 feet north of the southeast corner of sec. 12, T. 29 N., R. 31 E., W.M.:

Oi—2.5 inches to 1.0 inch; needles, twigs, and cones.

Oe—1 inch to 0; moderately decomposed forest litter.

A1—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark gray (10YR 3/1) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many fine and medium roots and common coarse roots; many very fine irregular pores; 20 percent fine pebbles; slightly acid; clear smooth boundary.

A2—5 to 11 inches; brown (10YR 5/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist;

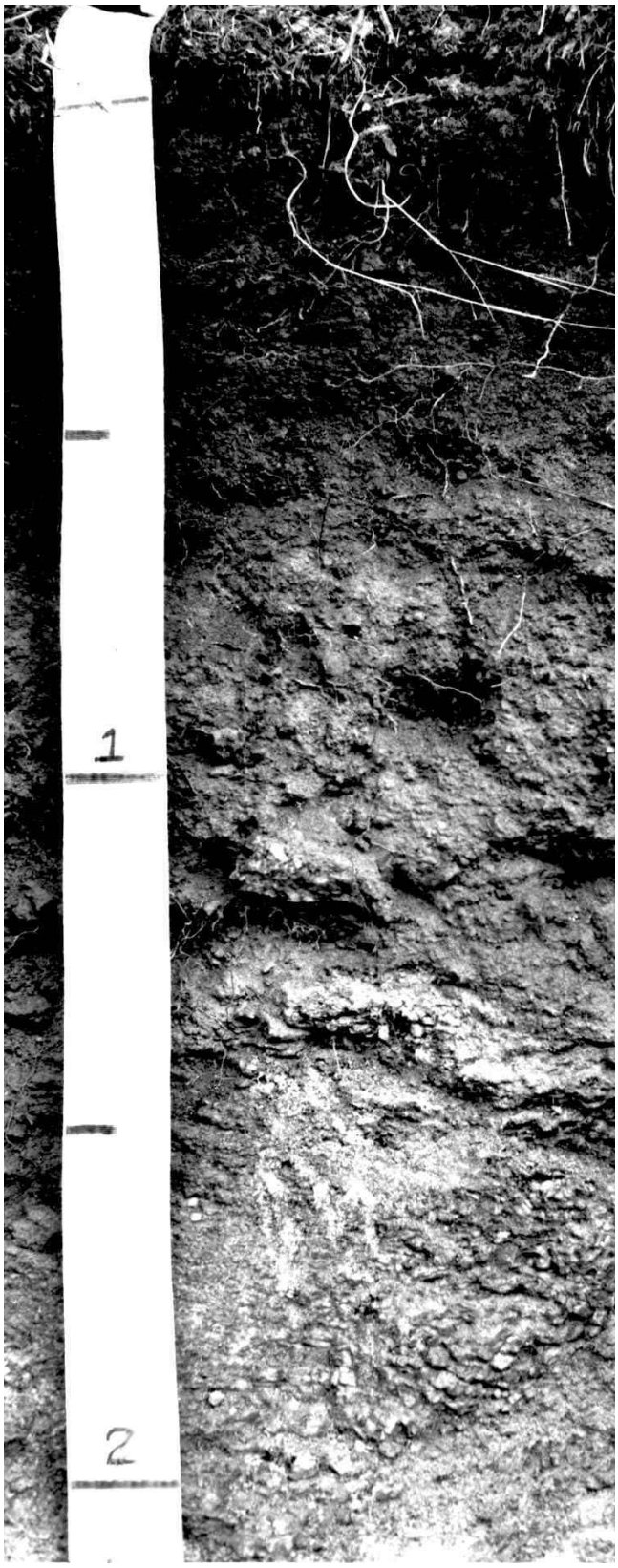


Figure 23.—Typical pedon of a Skanid soil that has weathered granitic bedrock at a depth of about 16 inches. (Numbers on tape represent feet.)

weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine, medium, and coarse roots; many very fine irregular pores; 20 percent fine pebbles; slightly acid; clear smooth boundary.

C—11 to 18 inches; brown (10YR 5/3) very gravelly coarse sandy loam, dark brown (10YR 4/3) dry; massive; slightly hard, friable, nonsticky and nonplastic; common fine and medium roots; common very fine tubular pores; 40 percent pebbles and 5 percent cobbles; slightly acid; clear wavy boundary.

Cr—18 to 28 inches; weathered quartz monzonite bedrock.

Depth to weathered bedrock is 10 to 20 inches. The particle-size control section is 35 to 50 percent rock fragments and 5 to 8 percent clay.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 to 3 moist. It is 15 to 30 percent pebbles and 0 to 5 percent cobbles. It is medium acid to neutral.

The Bw horizon, where present, has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 20 to 50 percent pebbles and 0 to 5 percent cobbles.

The C horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 30 to 55 percent pebbles and 0 to 5 percent cobbles.

Soaplake Series

The Soaplake series consists of shallow, well drained soils on ridges, shoulders, and backslopes of hills. These soils formed in residuum and colluvium derived from granitic rock with a component of loess. Slopes are 5 to 65 percent. Elevation is 1,300 to 2,400 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Soaplake loam in an area of Roosevelt-Soaplake-Rock outcrop complex, 5 to 30 percent slopes, about 2 miles east of Coulee Dam; 2,000 feet south and 1,700 feet east of the northwest corner of sec. 4, T. 28 N., R. 31 E., W.M.:

A—0 to 10 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; few fine tubular pores; 2 percent pebbles; neutral; clear smooth boundary.

Bw1—10 to 14 inches; yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic, common very fine and fine roots; common fine and very fine tubular pores; 5 percent pebbles; neutral; clear smooth boundary.

Bw2—14 to 17 inches; light yellowish brown (10YR 6/4) loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 10 percent pebbles; neutral; abrupt smooth boundary.

R—17 to 21 inches; granitic bedrock.

Depth to bedrock is 10 to 20 inches. The particle-size control section is 5 to 15 percent clay and 5 to 20 percent rock fragments. It is neutral or mildly alkaline.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is loam, fine sandy loam, or sandy loam with 5 to 25 percent pebbles and 0 to 5 percent cobbles.

Spens Series

The Spens series consists of very deep, somewhat excessively drained soils on terrace escarpments and kames. These soils formed in glacial outwash. Slopes are 20 to 65 percent. Elevation is 1,300 to 4,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Spens very stony loamy sand, dry, 40 to 65 percent slopes, about 11 miles northwest of Nespelem; 1,100 feet south and 800 feet west of the northeast corner of sec. 5, T. 31 N., R. 29 E., W.M.:

Oi—1.5 inches to 0; needles, branches, twigs, and cones.

A—0 to 3 inches; grayish brown (10YR 5/2) very stony loamy sand, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; many very fine irregular pores; 20 percent pebbles, 5 percent cobbles, and 12 percent stones; neutral; clear wavy boundary.

AC—3 to 15 inches; light brownish gray (10YR 6/2) gravelly loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine, fine, and

coarse roots and many medium roots; common very fine tubular pores; 25 percent pebbles; neutral; clear wavy boundary.
C—15 to 60 inches; multicolored very cobbly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; 25 percent pebbles and 20 percent cobbles; neutral.

The particle-size control section is 40 to 60 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 20 to 30 percent pebbles, 0 to 5 percent cobbles, and 5 to 15 percent stones and boulders.

The AC horizon has hue of 10YR or 2.5Y. This horizon is absent in some pedons.

The C horizon is multicolored. It is loamy sand or coarse sand with 20 to 50 percent pebbles and 15 to 30 percent cobbles.

Spokane Series

The Spokane series consists of moderately deep, well drained soils on summits, ridges, shoulders, backslopes, footslopes, and toeslopes of hills and mountains. These soils formed in residuum and colluvium derived from granitic rock with a component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 1,800 to 4,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Spokane loam, warm, in an area of Spokane, warm-Skanid, warm complex, 5 to 20 percent slopes, about 5 miles east of Elmer City; 300 feet east and 700 feet south of the northwest corner of sec. 19, T. 29 N., R. 32 E., W.M.:

Oi—0.5 inch to 0; needles, leaves, twigs, and cones.
A1—0 to 4 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 2/2) moist; strong fine and medium granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine irregular pores; 5 percent fine pebbles; slightly acid; clear wavy boundary.
A2—4 to 9 inches; dark brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common very fine tubular pores; 5 percent pebbles; slightly acid; gradual wavy boundary.
AB—9 to 12 inches; brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; common very fine tubular pores; 5 percent fine pebbles; slightly acid; clear wavy boundary.
Bw—12 to 22 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; few fine tubular pores; 10 percent fine pebbles; slightly acid; clear wavy boundary.
BC—22 to 30 inches; yellowish brown (10YR 5/4) gravelly coarse sandy loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure; hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 15 percent fine pebbles; slightly acid; clear smooth boundary.
C—30 to 33 inches; very pale brown (10YR 7/3) gravelly loamy coarse sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 30 percent fine pebbles; slightly acid; clear smooth boundary.
Cr—33 to 43 inches; weathered granitic bedrock.

Depth to weathered bedrock is 20 to 40 inches. The particle-size control section is 15 to 35 percent rock fragments. The mollic epipedon is 7 to 16 inches thick. The profile is neutral or slightly acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 5 to 10 percent pebbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is loam, sandy loam, or coarse sandy loam with 10 to 30 percent pebbles and 0 to 10 percent cobbles.

The C horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is coarse sandy loam or loamy coarse sand with 5 to 30 percent pebbles.

Springdale Series

The Springdale series consists of very deep, somewhat excessively drained soils on terraces and terrace escarpments. These soils formed in glacial outwash with a component of loess and volcanic ash. Slopes are 0 to 65 percent. Elevation is 1,400 to 3,500

feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Springdale gravelly sandy loam, 0 to 15 percent slopes, about 16 miles northeast of Nespelem; 750 feet south and 1,250 feet west of the northeast corner of sec. 26, T. 33 N., R. 32 E., W.M.:

Oe—1 inch to 0; moderately decomposed organic matter.
A—0 to 4 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; many fine and medium roots; many very fine irregular pores; 20 percent pebbles and 5 percent cobbles; neutral; clear smooth boundary.
Bw—4 to 11 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; many fine, medium, and coarse roots; common very fine tubular pores; 25 percent pebbles and 5 percent cobbles; neutral; clear smooth boundary.
C1—11 to 17 inches; very pale brown (10YR 7/3) gravelly sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; many fine, medium, and coarse roots; few fine tubular pores; 25 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.
C2—17 to 60 inches; multicolored extremely gravelly sand; single grain; loose, nonsticky and nonplastic; common fine and medium roots; few fine tubular pores; 50 percent pebbles and 15 percent cobbles; neutral.

Depth to the sandy substratum is 10 to 19 inches. The particle-size control section is 35 to 60 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 to 6 dry and 2 to 4 moist, and it has chroma of 2 or 3 dry or moist. It is 20 to 35 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry and 2 to 4 moist. It is coarse sandy loam or sandy loam with 20 to 45 percent pebbles and 0 to 10 percent cobbles.

The C1 horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loamy sand, loamy coarse sand, or sand with 20 to 50 percent pebbles and 0 to 15 percent cobbles.

The upper part of the C2 horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. The lower part is multicolored. The horizon is loamy coarse sand, sand, or coarse sand with 30 to 50 percent pebbles and 5 to 30 percent cobbles.

Stapaloop Series

The Stapaloop series consists of very deep, well drained soils on terraces and on footslopes and toeslopes of hills and mountains. These soils formed in glaciofluvial deposits and glacial till with a minor component of loess and volcanic ash. Slopes are 0 to 40 percent. Elevation is 1,900 to 4,800 feet. The average annual precipitation is 16 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the average frost-free period is 90 to 120 days.

Typical pedon of Stapaloop fine sandy loam, 0 to 20 percent slopes, about 8 miles northeast of Disautel; 1,000 feet north and 2,100 feet east of the southwest corner of sec 18, T. 34 N., R. 30 E., W.M.:

Oi—1 inch to 0; needles, leaves, and bark.
A—0 to 7 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, medium, and coarse roots; many very fine irregular pores; slightly acid; gradual wavy boundary.
Bw—7 to 22 inches; light gray (10YR 7/2) fine sandy loam, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots and common medium and coarse roots; common very fine tubular pores; slightly acid; gradual wavy boundary.
C1—22 to 31 inches; light gray (2.5Y 7/2) fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few very fine and fine roots and common medium and coarse roots; common very fine tubular pores; slightly acid; gradual wavy boundary.
C2—31 to 60 inches; white (10YR 8/2) very fine sandy loam, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few very fine and fine roots and common medium and coarse roots; few fine tubular pores; few distinct irregular wavy $^{1}/_{8}$- to $^{1}/_{4}$-inch-thick bands of very fine sandy loam that is brown (10YR 4/3) moist; slightly acid.

The particle-size control section is 2 to 8 percent clay and 0 to 25 percent pebbles. The profile is slightly acid or neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent rock fragments.

The Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 or 3 dry or moist. It is fine sandy loam or sandy loam with 0 to 10 percent rock fragments

The C horizon has hue of 10YR or 2.5Y, value of 6 to 8 dry and 4 or 5 moist, and chroma of 2 to 9 dry or moist. The upper part of the C horizon to a depth of about 30 inches is fine sandy loam or sandy loam with 0 to 25 percent pebbles, and the lower part is very fine sandy loam, fine sandy loam, or loamy fine sand with 0 to 30 percent pebbles.

Stepstone Series

The Stepstone series consists of very deep, well drained soils on toeslopes, footslopes, and backslopes of mountains. These soils formed in a mantle of volcanic ash over glacial till derived from granitic rock. Slopes are 5 to 65 percent. Elevation is 2,500 to 5,000 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the average frost-free period is 90 to 120 days.

Typical pedon of Stepstone loam, 5 to 20 percent slopes, about 17 miles north of Nespelem; 1,700 feet east and 1,600 feet south of the northwest corner of sec. 33, T. 34 N., R. 31 E., W.M.:

Oi—0.75 to 0.25 inch; needles, leaves, and twigs.

Oe—0.25 inch to 0; moderately decomposed needles, leaves, and twigs.

A—0 to 0.5 inch; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common fine and medium roots; many very fine irregular pores; 2 percent pebbles; neutral; abrupt smooth boundary.

Bw1—0.5 inch to 6 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; moderate very fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many fine, medium, and coarse roots; common very fine tubular pores; 5 percent pebbles, 5 percent cobbles, and 2 percent stones; neutral; clear smooth boundary.

Bw2—6 to 18 inches; light yellowish brown (10YR 6/4) loam, dark brown (7.5YR 4/4) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common fine, medium, and coarse roots; common very fine tubular pores; 10 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

BC—18 to 22 inches; very pale brown (10YR 7/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak very fine subangular blocky structure; soft, friable, nonsticky and nonplastic; common fine and medium roots; few fine tubular pores; 20 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

2C1—22 to 34 inches; light gray (10YR 7/2) very stony loamy sand, brown (10YR 5/3) dry; massive; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 20 percent pebbles, 15 percent cobbles, and 15 percent stones; neutral; gradual wavy boundary.

2C2—34 to 60 inches; white (10YR 8/2) extremely stony loamy sand, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 20 percent pebbles, 20 percent cobbles, and 20 percent stones; neutral.

The mantle of volcanic ash is 14 to 30 inches thick. The particle-size control section is 35 to 60 percent rock fragments. The profile is neutral or slightly acid.

The A horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry or moist. It is loam or bouldery loam with 0 to 5 percent stones and boulders, 0 to 5 percent cobbles, and 0 to 10 percent pebbles.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is loam or silt loam with 0 to 10 percent pebbles and 0 to 5 percent cobbles.

The BC horizon has value of 6 or 7 dry and 4 or 5 moist. It is sandy loam or loam with 15 to 30 percent pebbles and 5 to 15 percent cobbles.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 to 8 dry and 5 or 6 moist, and chroma of 2 or 3 dry or moist. It is 20 to 55 percent pebbles, 5 to 20 percent cobbles, and 5 to 25 percent stones.

Stevens Series

The Stevens series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on summits, backslopes, footslopes, and toeslopes of hills. They formed in glacial till with a component of loess and volcanic ash. Slopes are 0 to 65 percent. Elevation is 1,600 to 3,000 feet. The average annual precipitation

is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Stevens silt loam, 0 to 8 percent slopes, about 10 miles northeast of Inchelium; 800 feet west and 800 feet south of the northeast corner of sec. 30, T. 34 N., R. 36 E., W.M.:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, black (10YR 2/1) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 2 percent pebbles; neutral; clear wavy boundary.

A—9 to 22 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine irregular pores; 5 percent pebbles; neutral; clear wavy boundary.

Bw—22 to 30 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; 10 percent pebbles; neutral; clear smooth boundary.

2BC—30 to 38 inches; light brownish gray (10YR 6/2) gravelly loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 20 percent pebbles; neutral; clear wavy boundary.

2Cd—38 to 60 inches; light brownish gray (2.5Y 6/2) dense glacial till that crushes to gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, friable, sticky and nonplastic; few very fine roots; few fine tubular pores; 25 percent pebbles and 5 percent cobbles; neutral.

Depth to dense glacial till is 20 to 40 inches. The mollic epipedon is 20 to 30 inches thick. The particle-size control section is 5 to 30 percent rock fragments.

The Ap and A horizons have value of 3 or 4 dry and 2 or 3 moist, and they have chroma of 1 to 3 dry or moist. They are silt loam or gravelly silt loam with 0 to 30 percent pebbles.

The Bw and 2BC horizons have value of 5 or 6 dry and 3 to 5 moist, and they have chroma of 3 or 4 dry or moist. They are silt loam or loam with 10 to 30 percent pebbles.

The 2Cd horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 15 to 35 percent pebbles. It is neutral or mildly alkaline.

Strat Series

The Strat series consists of very deep, well drained soils on outwash terraces. These soils formed in glacial outwash with a component of loess in the upper part. Slopes are 0 to 10 percent. Elevation is 1,000 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Strat gravelly fine sandy loam, 0 to 10 percent slopes, about 9 miles south of Keller; 50 feet south and 2,500 feet east of the northwest corner of sec. 8, T. 28 N., R. 33 E., W.M.:

A—0 to 11 inches; brown (10YR 5/3) gravelly fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial pores; 25 percent pebbles; neutral; clear wavy boundary.

AB—11 to 17 inches; yellowish brown (10YR 5/4) very gravelly fine sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial pores; 35 percent pebbles and 5 percent cobbles; mildly alkaline; abrupt smooth boundary.

Bw—17 to 24 inches; yellowish brown (10YR 5/4) very gravelly fine sandy loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and common fine roots; few fine interstitial pores; 50 percent pebbles and 5 percent cobbles; mildly alkaline; clear smooth boundary.

2Bk1—24 to 31 inches; light brownish gray (2.5Y 6/2) extremely gravelly loamy sand, dark grayish brown (2.5Y 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few medium tubular pores; coatings of secondary lime on underside of rock fragments; violently effervescent; 45 percent pebbles and 20 percent cobbles; mildly alkaline; clear wavy boundary.

2Bk2—31 to 39 inches; light brownish gray (2.5Y 6/2) extremely gravelly sand, dark grayish brown (2.5Y 4/2) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine

tubular pores; secondary lime coatings on underside of rock fragments; violently effervescent; 40 percent pebbles, 20 percent cobbles, and 5 percent stones; mildly alkaline; abrupt smooth boundary.

2Bk3—39 to 60 inches; multicolored extremely cobbly coarse sand; single grain; loose, nonsticky and nonplastic; coatings of secondary lime on undersides of rock fragments; violently effervescent; 35 percent pebbles, 25 percent cobbles, and 15 percent stones; moderately alkaline.

Depth to secondary carbonates is 18 to 36 inches. The particle-size control section is 40 to 70 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 35 percent pebbles and 0 to 5 percent cobbles. It is neutral or mildly alkaline.

The Bw horizon has value of 3 or 4 moist and chroma of 3 or 4 dry or moist. It is fine sandy loam or loam with 25 to 50 percent pebbles and 5 to 20 percent cobbles. It is neutral or mildly alkaline.

The upper part of the 2Bk horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. The lower part is multicolored. The horizon is sand, coarse sand, or loamy sand with 35 to 60 percent pebbles, 5 to 25 percent cobbles, and 0 to 15 percent stones. It is mildly alkaline or moderately alkaline.

Stubblefield Series

The Stubblefield series consists of soils that are moderately deep to a duripan. These soils are underlain by dense glacial till and are well drained. They are on ground moraines and glaciated hills. They formed in glacial till derived from basalt with a component of loess. Slopes are 3 to 65 percent. Elevation is 1,200 to 2,000 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Stubblefield stony loam, 3 to 25 percent slopes, about 16 miles northeast of Bridgeport; 900 feet north and 500 feet west of the southeast corner of sec. 18, T. 30 N., R. 28 E., W.M.:

A—0 to 9 inches; grayish brown (10YR 5/2) stony loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and slightly plastic; many very fine roots and common fine roots; few fine irregular pores; 10 percent pebbles and 5 percent stones; neutral; clear wavy boundary.

Bw—9 to 24 inches; pale brown (10YR 6/3) very gravelly loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine interstitial pores; 30 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral; abrupt smooth boundary.

Bkqm—24 to 28 inches; light brownish gray (2.5Y 6/2) strongly lime- and silica-cemented duripan, dark grayish brown (2.5Y 4/2) moist; massive; very hard, very firm, nonsticky and nonplastic; few very fine roots matted on top of duripan; common masses of lime in voids; 25 percent pebbles, 15 percent cobbles, and 10 percent stones; slightly effervescent; strongly alkaline; clear wavy boundary.

2Bkd—28 to 60 inches; light brownish gray (2.5Y 6/2) dense glacial till that crushes to very cobbly sandy loam, dark brownish gray (2.5Y 4/2) moist; massive; hard, firm, nonsticky and nonplastic; few very fine interstitial and tubular pores; 30 percent cobbles, 10 percent pebbles, and 5 percent stones; few fine filaments and soft masses of calcium carbonate, disseminated carbonates in matrix, and few fine distinct coatings of carbonates on rock fragments; strongly effervescent; moderately alkaline (pH 8.0).

Depth to the duripan is 20 to 40 inches. The mollic epipedon is 8 to 12 inches thick.

The A horizon has chroma of 2 or 3 dry or moist. It is 2 to 5 percent stones, 2 to 5 percent cobbles, and 10 to 15 percent pebbles. It is neutral or mildly alkaline.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 or 3 dry or moist. It is loam or sandy loam with 25 to 50 percent pebbles, 5 to 15 percent cobbles, and 0 to 10 percent stones. It is neutral or mildly alkaline.

The Bkqm horizon has hue of 10YR or 2.5Y, value of 5 to 7 moist, and chroma of 1 or 2 dry or moist.

The 2Bkd horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 4 to 6 moist, and chroma of 1 or 2 dry or moist. It is sandy loam or fine sandy loam with 10 to 40 percent pebbles, 5 to 35 percent cobbles, and 0 to 10 percent stones. It is mildly alkaline to strongly alkaline.

Swakane Series

The Swakane series consists of shallow, well drained soils on ridges, shoulders, and backslopes of glacially scoured hills and mountains. These soils formed in residuum and colluvium derived from granitic rock with a component of loess and volcanic ash. Slopes are 3 to 70 percent. Elevation is 1,500 to 3,000 feet. The average annual precipitation is 12 to 16 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Swakane cobbly loam, 25 to 65 percent slopes, about 6 miles southeast of Nespelem; 1,000 feet north and 100 feet west of the southeast corner of sec. 1, T. 30 N., R. 31 E., W.M.:

A1—0 to 6 inches; grayish brown (10YR 5/2) cobbly loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common fine tubular pores; 15 percent pebbles and 10 percent cobbles; slightly acid; clear wavy boundary.

A2—6 to 11 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; massive; soft, very friable, nonsticky and nonplastic; common fine roots; common fine tubular and interstitial pores; 40 percent pebbles and 15 percent cobbles; neutral; clear wavy boundary.

C—11 to 14 inches; brown (10YR 5/3) extremely gravelly sandy loam, dark brown (10YR 3/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine tubular and irregular pores; 45 percent pebbles and 15 percent cobbles; neutral; gradual wavy boundary.

R—14 to 18 inches; granitic bedrock.

Depth to bedrock is 10 to 20 inches. The particle-size control section is 35 to 70 percent rock fragments and 7 to 18 percent clay.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. The upper part is very stony loam or cobbly loam with 15 to 40 percent pebbles, 10 to 15 percent cobbles, and 0 to 15 percent stones and boulders. The lower part is loam, sandy loam, or coarse sandy loam with 0 to 5 percent stones, 5 to 20 percent cobbles, and 35 to 55 percent pebbles. The horizon is slightly acid or neutral.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 6 dry and 3 to 5 moist, and chroma of 3 or 4 dry or moist. It is loam or sandy loam with 35 to 60 percent pebbles, 5 to 20 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline. This horizon is absent in some pedons.

Swipkin Series

The Swipkin series consists of very deep, well drained soils on lake plains and terraces. These soils formed in glacial lake sediment with a component of loess and volcanic ash. Slopes are 0 to 10 percent. Elevation is 1,450 to 2,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Swipkin silt loam, 0 to 5 percent slopes, about 1.5 miles west of Disautel; 1,800 feet east and 850 feet north of the southwest corner of sec. 14, T. 33 N., R. 28 E., W.M.:

O—2 inches to 0; needles, twigs, and cones.

A1—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; neutral; clear smooth boundary.

A2—7 to 16 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium roots; common very fine tubular pores; neutral; gradual smooth boundary.

Bw—16 to 21 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; 2 percent pebbles; neutral; clear smooth boundary.

C1—21 to 44 inches; light brownish gray (2.5Y 6/2) silt loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 2 percent pebbles; neutral; gradual smooth boundary.

C2—44 to 60 inches; light brownish gray (2.5Y 6/2) silt loam, dark grayish brown (2.5Y 4/2) moist; massive (varved); hard, friable, slightly sticky and slightly plastic; few very fine roots between varve planes; few fine tubular pores; 2 percent pebbles; mildly alkaline.

The mollic epipedon is 7 to 17 inches thick. The particle-size control section is 10 to 18 percent clay and less than 15 percent material that is coarser than very fine sand.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 3 or 4 dry or moist. It is slightly acid or neutral.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. The horizon is silt loam or very fine sandy loam with 0 to 10 percent pebbles.

The C horizon has hue of 10YR or 2.5Y, value of 6 to 8 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is silt loam or very fine sandy loam with 0 to 10 percent pebbles. It is neutral to moderately alkaline. The C horizon has secondary carbonates below a depth of 44 inches in some pedons.

Thout Series

The Thout series consists of moderately deep, well drained soils on summits, shoulders, and backslopes of hills and mountains. These soils formed in residuum and colluvium derived from rhyodacite and quartz latite with some glacial till and a minor component of volcanic ash and loess. Slopes are 5 to 65 percent. Elevation is 2,200 to 4,200 feet. The average annual precipitation is 15 to 20 inches, the average annual air temperature is 42 to 46 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Thout gravelly loam in an area of Thout, dry-Rock outcrop complex, 20 to 40 percent slopes, about 20 miles northeast of Nespelem; 1,800 feet west and 1,400 feet south of the northeast corner of sec. 27, T. 34 N., R. 32 E., W.M.:

Oi—1 inch to 0; needles, twigs, and leaves.

A—0 to 4 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; common very fine irregular pores; 20 percent pebbles; neutral; clear wavy boundary.

Bw1—4 to 18 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common very fine irregular pores; 40 percent pebbles and 10 percent cobbles; neutral; clear wavy boundary.

Bw2—18 to 26 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; few very fine irregular pores; 45 percent pebbles and 10 percent cobbles; neutral; abrupt wavy boundary.

R—26 to 30 inches; rhyodacite bedrock.

Depth to bedrock is 20 to 40 inches. The particle-size control section is 35 to 60 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 25 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 3 or 4 dry or moist. It is loam or sandy loam with 20 to 45 percent pebbles, 0 to 15 percent cobbles, and 0 to 5 percent stones.

Timentwa Series

The Timentwa series consists of soils that are deep to a duripan and are well drained. These soils are on glacial till plains and moraines on basalt plateaus. They formed in glacial till derived mainly from basalt with a mantle of loess and volcanic ash. Slopes are 0 to 65 percent. Elevation is 2,200 to 2,900 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Timentwa loam, 0 to 8 percent slopes, about 5 miles east of Monse; 300 feet east and 300 feet north of the southwest corner of sec. 33, T. 31 N., R. 26 E., W.M.:

A1—0 to 2 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine and few fine roots; common very fine irregular pores; 5 percent pebbles; slightly acid; abrupt smooth boundary.

A2—2 to 7 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; slightly hard, friable, nonsticky and nonplastic; many very fine and few fine roots; common very fine irregular pores; 5 percent pebbles; neutral; gradual wavy boundary.

A3—7 to 18 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common very fine irregular pores and few very fine tubular

pores; 5 percent pebbles; neutral; gradual wavy boundary.
Bw1—18 to 28 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine roots; few very fine irregular and tubular pores; 15 percent pebbles; neutral; clear wavy boundary.
2Bw2—28 to 41 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine roots; few very fine irregular and vesicular pores; 15 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.
2Bk1—41 to 50 inches; light brownish gray (2.5Y 6/2) cobbly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, nonsticky and slightly plastic; common very fine roots; few very fine irregular and vesicular pores; 10 percent pebbles, 10 percent cobbles, and 5 percent stones; strongly effervescent with common fine irregularly shaped soft masses of secondary lime; strongly alkaline; clear wavy boundary.
2Bk2—50 to 56 inches; pale brown (10YR 6/3) cobbly sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine irregular pores; 10 percent cobbles and 10 percent pebbles; strongly effervescent with common fine irregularly shaped soft masses of secondary lime; strongly alkaline; abrupt wavy boundary.
2Bkqm—56 to 60 inches; light brownish gray (2.5Y 6/2) weakly lime- and silica-cemented duripan that crushes to gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; extremely hard, firm, nonsticky and nonplastic; few very fine irregular pores; 15 percent pebbles, 5 percent cobbles, and 5 percent stones; violently effervescent with common fine irregularly shaped masses of secondary lime in seams; strongly alkaline.

The mollic epipedon is 20 to 30 inches thick. Depth to secondary carbonates is 24 to 43 inches. The particle-size control section is 10 to 35 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loam or very bouldery loam with 5 to 10 percent pebbles, 0 to 15 percent cobbles, and 0 to 15 percent stones and boulders. It is slightly acid to mildly alkaline.

The Bw and 2Bw horizons have hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. They are loam or very fine sandy loam with 5 to 25 percent pebbles and 0 to 10 percent cobbles. They are neutral or mildly alkaline.

The 2Bk horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry and 2 or 3 moist. It is loam, fine sandy loam, or sandy loam with 10 to 40 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones. It is mildly alkaline to strongly alkaline.

The 2Bkqm horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is 10 to 30 percent pebbles, 5 to 20 percent cobbles, and 0 to 10 percent stones. It is moderately alkaline or strongly alkaline.

Togo Series

The Togo series consists of very deep, well drained soils on ridges, backslopes, footslopes, and toeslopes of mountains. These soils formed in a mantle of volcanic ash over residuum and colluvium derived from granitic rock. Slopes are 5 to 65 percent. Elevation is 4,000 to 6,000 feet. The average annual precipitation is 20 to 30 inches, the average annual air temperature is 39 to 42 degrees F, and the frost-free period is 80 to 110 days.

Typical pedon of Togo silt loam, 20 to 40 percent slopes, about 18 miles northwest of Inchelium; 1,000 feet south and 1,600 feet east of the northwest corner of sec. 32, T. 34 N., R. 34 E., W.M.:

Oi—2 inches to 0; needles, leaves, and twigs.
A—0 to 4 inches; yellowish brown (10YR 5/4) silt loam, dark brown (7.5YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common very fine tubular pores; 5 percent pebbles and 2 percent cobbles; slightly acid (NaF pH 11.0); clear wavy boundary.
Bw—4 to 15 inches; yellowish brown (10YR 5/4) silt loam, dark brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common very fine tubular pores; 5 percent pebbles and 2 percent cobbles; slightly acid (NaF pH 11.0); clear wavy boundary.
2BC—15 to 28 inches; light yellowish brown (10YR 6/4) very cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few fine and medium

roots; few fine tubular pores; 15 percent pebbles, 20 percent cobbles, and 5 percent stones; medium acid; gradual wavy boundary.
2C—28 to 60 inches; light yellowish brown (10YR 6/4) very cobbly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 20 percent pebbles, 30 percent cobbles, and 5 percent stones; medium acid.

The mantle of volcanic ash is 14 to 20 inches thick.

The A horizon has hue of 10YR or 7.5YR and value of 6 or 7 dry and 4 or 5 moist. It is silt loam or very stony silt loam with 0 to 25 percent pebbles, 0 to 15 percent cobbles, and 0 to 15 percent stones. It is slightly acid or neutral.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 or 6 dry and 4 or 5 moist, and chroma of 3 or 4 dry or moist. It is silt loam or loam with 0 to 20 percent pebbles, 0 to 20 percent cobbles, and 0 to 5 percent stones. It is slightly acid or neutral.

The 2BC horizon has value of 6 or 7 dry and 4 to 6 moist, and it has chroma of 2 to 4 dry or moist. It is 15 to 35 percent pebbles, 10 to 25 percent cobbles, and 0 to 5 percent stones. It is slightly acid or medium acid.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 to 8 dry and 4 to 6 moist, and chroma of 2 to 4 dry or moist. It is 20 to 60 percent pebbles, 15 to 35 percent cobbles, and 0 to 5 percent stones. It is slightly acid or medium acid.

Torboy Series

The Torboy series consists of very deep, well drained soils on terraces and on toeslopes, footslopes, and backslopes of mountains. These soils formed in glacial outwash with a component of loess and volcanic ash in the upper part. Slopes are 0 to 40 percent. Elevation is 2,800 to 4,500 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Torboy fine sandy loam, 0 to 20 percent slopes, about 21 miles north of Nespelem; 1,500 feet north and 1,500 feet west of the southeast corner of sec. 3, T. 34 N., R. 30 E., W.M.:

Oi—1 inch to 0; needles, leaves, twigs, bark, and cones.
A—0 to 4 inches; pale brown (10YR 6/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine irregular pores; slightly acid; abrupt smooth boundary.
Bw—4 to 16 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine, and coarse roots and few medium roots; many very fine irregular pores; slightly acid; clear wavy boundary.
2CB—16 to 20 inches; light gray (10YR 7/2) gravelly loamy sand, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 25 percent pebbles and 5 percent cobbles; neutral; gradual wavy boundary.
2C1—20 to 33 inches; very pale brown (10YR 7/3) gravelly sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 25 percent pebbles; neutral; gradual wavy boundary.
2C2—33 to 60 inches; light gray (10YR 7/1) gravelly fine sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 20 percent pebbles; neutral.

Depth to the sandy substratum is 16 to 24 inches. The particle-size control section is 2 to 8 percent clay and 15 to 35 percent rock fragments. It is slightly acid or neutral.

The A horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 to 4 dry or moist. It is fine sandy loam or sandy loam with 0 to 20 percent pebbles and 0 to 5 percent cobbles.

The 2CB and 2C horizons have hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 1 to 4 dry or moist. They are loamy sand, fine sand, or sand with 15 to 40 percent pebbles and 0 to 15 percent cobbles.

Torrifluventic Haploxerolls

Torrifluventic Haploxerolls consist of very deep, excessively drained soils on stream terraces. These soils formed in alluvium. Slopes are 0 to 3 percent. Elevation is 800 to 2,000 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Reference pedon of Torrifluventic Haploxerolls, 0 to 3 percent slopes, about 14 miles southeast of

Okanogan; 1,575 feet south and 1,450 feet west of the northeast corner of sec. 29, T. 32 N., R. 28 E., W.M.:

A—0 to 11 inches; gray (10YR 5/1) loamy coarse sand, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; common very fine tubular pores; violently effervescent; moderately alkaline; abrupt wavy boundary.

C1—11 to 17 inches; brown (10YR 5/3) coarse sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and few fine roots; common very fine tubular pores; 2 percent pebbles; strongly effervescent; moderately alkaline; abrupt smooth boundary.

C2—17 to 26 inches; pale brown (10YR 6/3) coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; 2 percent pebbles; slightly effervescent; moderately alkaline; abrupt wavy boundary.

C3—26 to 29 inches; light brownish gray (10YR 6/2) coarse sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; few very fine and fine tubular pores; slightly effervescent; moderately alkaline; abrupt smooth boundary.

C4—29 to 45 inches; multicolored and very pale brown (10YR 7/3) stratified coarse sand and loamy fine sand, light yellowish brown (10YR 6/4) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; slightly effervescent in the loamy fine sand; mildly alkaline; abrupt wavy boundary.

C5—45 to 58 inches; light brownish gray (10YR 6/2) silt loam, grayish brown (10YR 5/2) with strata of very dark grayish brown (10YR 3/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; strongly effervescent; moderately alkaline; abrupt wavy boundary.

C6—58 to 60 inches; light brownish gray (10YR 6/2) coarse sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; slightly effervescent; moderately alkaline.

The mollic epipedon is 10 to 18 inches thick. The particle-size control section is 2 to 10 percent clay and 0 to 65 percent rock fragments. The profile is neutral to moderately alkaline. Occasional periods of flooding occur in February through May.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist.

The C horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 or 3 dry and 2 to 4 moist. It is stratified with silt loam to coarse sand. It is 0 to 45 percent pebbles, 0 to 25 percent cobbles, and 0 to 5 percent stones.

Torriorthents

Torriorthents consist of very deep, well drained soils on highly dissected, eroded backslopes of glaciated hills. These soils formed in glacial till mixed with a small amount of loess in the upper part. Slopes are 25 to 70 percent. Elevation is 1,000 to 2,000 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Reference pedon of Torriorthents in an area of Malott-Torriorthents complex, 25 to 70 percent slopes, about 7 miles northeast of Bridgeport; 50 feet south and 1,600 feet east of the northwest corner of sec. 26, T. 30 N., R. 26 E., W.M.:

A—0 to 6 inches; light gray (10YR 7/2) stony loam, grayish brown (10YR 5/2) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; common fine and medium roots; common fine tubular and interstitial pores; 15 percent pebbles, 5 percent cobbles, and 5 percent stones; slightly effervescent; mildly alkaline; gradual wavy boundary.

Ck—6 to 60 inches; light gray (10YR 7/2) very cobbly fine sandy loam, light brownish gray (10YR 6/2) moist; massive; hard, firm, nonsticky and nonplastic; few fine and medium roots; few fine and medium tubular and interstitial pores; common masses of carbonates; strongly effervescent; 25 percent pebbles, 10 percent cobbles, and 5 percent stones; moderately alkaline.

The particle-size control section is 25 to 50 percent rock fragments.

The A horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 or 3 dry or moist. It is mildly alkaline or moderately alkaline. This horizon is absent in some pedons.

The Ck horizon has value of 6 or 7 dry and 5 or 6 moist, and it has chroma of 1 or 2 dry and 2 or 3 moist. It is fine sandy loam, sandy loam, or loam with 20 to 45 percent pebbles and 5 to 20 percent cobbles and stones. It is moderately alkaline or strongly alkaline. Some pedons are as much as 35 percent weakly cemented durinodes.

Tunkcreek Series

The Tunkcreek series consists of very deep, well drained soils on terraces and on toeslopes and footslopes of mountains. These soils formed in sandy glacial outwash with a mantle of volcanic ash and loess. Slopes are 5 to 40 percent. Elevation is 3,500 to 4,600 feet. The average annual precipitation is 22 to 28 inches, the average annual air temperature is 39 to 41 degrees F, and the frost-free period is 80 to 100 days.

Typical pedon of Tunkcreek fine sandy loam, 20 to 40 percent slopes, about 11 miles northeast of Omak; 100 feet east and 2,350 feet north of the southwest corner of sec. 10, T. 34 N., R. 28 E., W M.:

Oe —1.5 inches to 0; moderately decomposed needles, twigs, and mosses.

C—0 to 0.75 inch; light gray (10YR 7/1) very fine sandy loam, grayish brown (10YR 5/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; few fine tubular pores; neutral; abrupt wavy boundary.

Bw1—0.75 inch to 7 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots and few coarse roots; few fine tubular pores; 2 percent pebbles; slightly acid; clear wavy boundary.

Bw2—7 to 16 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots and few coarse roots; few fine tubular pores; 5 percent pebbles; slightly acid; clear wavy boundary.

2C1—16 to 31 inches; light gray (10YR 7/2) loamy sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 10 percent pebbles; slightly acid; gradual wavy boundary.

2C2—31 to 60 inches; light gray (10YR 7/1) gravelly coarse sand, grayish brown (10YR 5/2) moist; coarse sand grains are multicolored; single grain; loose, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 20 percent pebbles; neutral.

The mantle of volcanic ash is 14 to 20 inches thick. The particle-size control section is 0 to 20 percent rock fragments.

The C horizon is absent in some pedons.

The Bw horizon has value of 4 or 5 moist and chroma of 2 to 4 dry or moist. It is 0 to 10 percent pebbles. It is slightly acid or medium acid.

The 2C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 1 to 3 dry and 2 or 3 moist. It is loamy sand, sand, or coarse sand with 0 to 25 percent pebbles and 0 to 5 percent cobbles. It is slightly acid or neutral.

Tyee Series

The Tyee series consists of soils that are shallow to bedrock and are well drained. These soils are on summits, shoulders, and backslopes of hills. They formed in residuum and colluvium derived from granitic rock with a component of loess. Slopes are 5 to 65 percent. Elevation is 2,000 to 3,200 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days

Typical pedon of Tyee gravelly loam, 5 to 30 percent slopes, about 4 miles northeast of Elmer City; 2,100 feet south and 1,600 feet east of the northwest corner of sec. 11, T. 29 N., R. 31 E., W.M.:

A1—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly loam, black (10YR 2/1) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 15 percent pebbles; slightly acid; gradual wavy boundary.

A2—5 to 11 inches; brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 15 percent pebbles; slightly acid; clear smooth boundary.

Bw—11 to 17 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; 20 percent pebbles; neutral; clear smooth boundary.

Cr—17 to 27 inches; weathered granitic bedrock.

Depth to weathered bedrock is 10 to 20 inches. The particle-size control section is 15 to 35 percent rock fragments. The profile is slightly acid or neutral.

The A horizon has chroma of 2 or 3 dry and 1 to 3 moist. It is 15 to 25 percent pebbles and 0 to 5 percent cobbles.

The Bw horizon has value of 5 or 6 dry and 3 or 4

moist, and it has chroma of 3 or 4 dry or moist. It is loam, sandy loam, or coarse sandy loam with 10 to 35 percent pebbles and 0 to 5 percent cobbles.

Typic Haplaquolls

Typic Haplaquolls consist of very deep, poorly drained soils on low terraces and flood plains. These soils formed in alluvium and glacial outwash. Slopes are 0 to 2 percent. Elevation is 740 to 800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Reference pedon of Typic Haplaquolls, 0 to 2 percent slopes, about 1,300 feet north of the southeast corner of sec. 17, T. 30 N., R. 25 E., W.M.:

A—0 to 8 inches; brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine roots; common fine tubular and interstitial pores; mildly alkaline; gradual wavy boundary.

Bw—8 to 24 inches; light brownish gray (2.5Y 6/2) fine sandy loam, dark grayish brown (2.5Y 4/2) moist; few fine faint mottles that are gray (10YR 5/1) when moist; weak moderate subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; many fine tubular pores; mildly alkaline; gradual wavy boundary.

C1—24 to 32 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; few fine faint mottles that are gray (10YR 5/1) when moist; massive; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; common fine tubular and vesicular pores; 5 percent pebbles; mildly alkaline; gradual wavy boundary.

C2—32 to 60 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few fine and very fine roots; common fine tubular and vesicular pores; 5 percent pebbles; mildly alkaline.

The mollic epipedon is 8 to 20 inches thick. The particle-size control section averages 5 to 12 percent clay and 0 to 50 percent rock fragments. An apparent water table is present in December through August. Occasional periods of flooding occur in January through June.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is fine sandy loam, sandy loam, or loamy sand with 0 to 10 percent pebbles and 0 to 5 percent cobbles. The horizon is neutral or mildly alkaline. It is slightly effervescent in some pedons.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 4 or 5 moist, and chroma of 1 or 2 dry or moist. Mottles have value of 4 to 6 and chroma of 1 to 4 moist. The horizon is fine sandy loam, coarse sandy loam, or loamy sand with 0 to 50 percent pebbles and 0 to 5 percent cobbles. It is slightly effervescent to strongly effervescent in some pedons. It is mildly alkaline or moderately alkaline. This horizon is absent in some pedons.

The C horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 1 or 2 dry or moist. Mottles in the upper part have value of 4 or 5 and chroma of 1 to 4 moist. The horizon is fine sandy loam, very fine sandy loam, or sand with 0 to 60 percent pebbles and 0 to 10 percent cobbles. It is slightly effervescent or strongly effervescent in some pedons. It is mildly alkaline or moderately alkaline.

Typic Xerochrepts

Typic Xerochrepts consist of very deep, well drained soils on unstable terrace escarpments and hummocky metastable slopes associated with landslides. These soils formed in glacial outwash, glaciofluvial material, glacial lake sediment, and mixed material derived from landslides. Slopes are 5 to 50 percent. Elevation is 1,300 to 1,900 feet. The average annual precipitation is 15 to 17 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Reference pedon of Typic Xerochrepts in an area of Typic Xerorthents-Typic Xerochrepts, 5 to 50 percent slopes, about 3 miles south of Keller; 600 feet south and 500 feet east of the northwest corner of sec. 4, T. 29 N., R. 33 E., W.M.:

A—0 to 7 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots and common fine and medium roots; many very fine irregular pores; 30 percent rounded pebbles; neutral; abrupt wavy boundary.

Bw—7 to 22 inches; light brownish gray (2.5Y 6/2) very gravelly coarse sandy loam, dark grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine roots and common fine and medium roots; many very fine irregular pores; 35 percent rounded pebbles,

10 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

Bk1—22 to 31 inches; light gray (2.5Y 7/2) very gravelly loam, grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 30 percent rounded pebbles and 5 percent cobbles; strongly effervescent; mildly alkaline; abrupt wavy boundary.

2Bk2—31 to 60 inches; light brownish gray (2.5Y 6/2) silt loam, dark grayish brown (2.5Y 4/2) moist; massive (varved); slightly hard, friable, slightly sticky and slightly plastic; common very fine roots and few fine, medium, and coarse roots; common very fine tubular pores; strongly effervescent; mildly alkaline.

The particle-size control section is 15 to 30 percent clay and 5 to 45 percent rock fragments.

The A horizon has hue of 10YR or 2.5Y, value of 4 or 5 dry and 2 or 3 moist, and chroma of 2 or 3 dry or moist. It is 5 to 30 percent pebbles and 0 to 15 percent cobbles.

The Bw horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is silty clay loam, loam, or coarse sandy loam with 15 to 40 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones.

The Bk horizon has value of 6 or 7 dry and 4 or 5 moist. It is silt loam, loam, or sandy loam with 5 to 35 percent pebbles and 0 to 5 percent cobbles. This horizon is absent in some pedons.

The 2Bk horizon has hue of 2.5Y or 5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is fine sandy loam, silt loam, or silty clay loam with 0 to 10 percent pebbles. This horizon is absent in some pedons.

Typic Xerorthents

Typic Xerorthents consist of very deep, well drained and somewhat excessively drained soils on unstable terrace escarpments and slopes associated with recent landslides. These soils formed in glacial outwash, glaciofluvial material, glacial lake sediment, and mixed material derived from landslides and debris flows. Slopes are 5 to 50 percent. Elevation is 1,300 to 2,600 feet. The average annual precipitation is 12 to 17 inches, the average annual air temperature is 45 to 49 degrees F, and the frost-free period is 100 to 150 days.

Reference pedon of Typic Xerorthents in an area of Typic Xerorthents-Typic Xerochrepts complex, 5 to 50 percent slopes, about 4 miles south of Keller; 500 feet south and 1,350 feet east of the northwest corner of sec. 9, T. 29 N., R. 33 E., W.M.:

A—0 to 5 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium roots; many very fine irregular pores; 5 percent rounded pebbles; mildly alkaline; abrupt smooth boundary.

Bw—5 to 9 inches; grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y 3/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 10 percent rounded pebbles; mildly alkaline; clear smooth boundary.

Bk1—9 to 25 inches; light gray (2.5Y 7/2) gravelly sandy loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, friable, slightly sticky and nonplastic; common very fine roots and few fine and medium roots; common very fine tubular pores; common masses of lime; slightly effervescent; 15 percent rounded pebbles and 5 percent cobbles; moderately alkaline; clear wavy boundary.

Bk2—25 to 49 inches; pale yellow (2.5Y 7/4) sandy loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; common masses of lime; strongly effervescent; 10 percent rounded pebbles; moderately alkaline; clear smooth boundary.

2Bk3—49 to 60 inches; light gray (2.5Y 7/2) and white (2.5Y 8/2) silty clay loam, light brownish gray (2.5Y 6/2) moist; stains or mottles that are very dark grayish brown (2.5Y 3/2) when moist; massive (varved); firm, sticky and plastic; few fine roots; few fine tubular pores; common masses of lime; strongly effervescent; 5 percent rounded pebbles; mildly alkaline.

The particle-size control section is 5 to 27 percent clay and 0 to 45 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is silt loam or loam with 0 to 25 percent pebbles, 0 to 10 percent cobbles, and 0 to 5 percent stones. It is neutral or mildly alkaline.

The Bw horizon has hue of 10YR or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 or 3 dry

or moist. It is loam or sandy loam with 5 to 25 percent pebbles and 0 to 10 percent cobbles. It is neutral or mildly alkaline.

The Bk and 2Bk horizons have value of 5 to 8 dry and 3 to 4 moist, and they have chroma of 2 to 4 dry or moist. They are silty clay loam, sandy loam, or silt loam with 0 to 15 percent cobbles. They are mildly alkaline or moderately alkaline.

Ultic Haploxerolls

Ultic Haploxerolls consist of very deep, well drained and somewhat excessively drained soils on terrace escarpments. These soils formed in glacial outwash, glaciofluvial material, and glacial lake sediment. The parent material commonly is mixed by colluvial action, and it is stratified in some areas. Slopes are 40 to 70 percent and are mainly north- and east-facing. Elevation is 1,400 to 2,800 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Reference pedon of Ultic Haploxerolls, 40 to 70 percent slopes, about 3 miles southeast of Keller; 1,100 feet west and 300 feet south of the northeast corner of sec. 4, T. 29 N., R. 33 E., W.M.:

Oi—2 inches to 0.5 inch; needles, twigs, leaves, and cones.

Oe—0.5 inch to 0; moderately decomposed organic matter.

A1—0 to 6 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; many very fine irregular pores; 20 percent rounded pebbles; slightly acid; clear wavy boundary.

A2—6 to 13 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, and medium roots; common very fine tubular pores; 25 percent rounded pebbles; neutral; gradual wavy boundary.

Bw—13 to 28 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium and coarse roots; common very fine tubular pores; 25 percent rounded pebbles and 2 percent cobbles, neutral; gradual wavy boundary.

C1—28 to 42 inches; light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic, few very fine, fine, and medium roots; common very fine tubular pores; 30 percent rounded pebbles; neutral; clear wavy boundary.

C2—42 to 60 inches; light brownish gray (10YR 6/2) gravelly loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 20 percent rounded pebbles; neutral.

The mollic epipedon is 7 to 18 inches thick. The particle-size control section is 5 to 30 percent clay and 10 to 60 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 15 to 25 pebbles and 0 to 5 percent cobbles. It is slightly acid or neutral.

The Bw horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is clay loam, fine sandy loam, or sandy loam with 5 to 30 percent pebbles and 0 to 15 percent cobbles. It is neutral or mildly alkaline. This horizon is absent in some pedons.

The C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is sandy loam, loamy sand, or sand with 5 to 50 percent pebbles and 0 to 20 percent cobbles. Stratification is common. The horizon is neutral to moderately alkaline.

Uncas Series

The Uncas series consists of very deep, very poorly drained soils in backswamps and valley flats. These soils formed in alluvium derived dominantly from volcanic ash overlain by decomposed organic material. Slopes are 0 to 2 percent. Elevation is 1,900 to 2,600 feet. The average annual precipitation is 18 to 22 inches, the average annual air temperature is 42 to 45 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Uncas muck, 0 to 2 percent slopes, about 11 miles east of Keller; 1,950 feet north and 1,900 feet west of the southeast corner of sec. 28, T. 30 N., R. 35 E., W.M.:

Oa—0 to 7 inches; dark gray (10YR 4/1) muck, black (10YR 2/1) moist; about 15 percent fiber, less than 5 percent rubbed; moderate fine and medium granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine irregular pores; neutral; clear smooth boundary.

A—7 to 11 inches; gray (10YR 5/1) silt loam, very dark brown (10YR 2/2) moist; moderate fine angular blocky structure; slightly hard, friable, nonsticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; neutral; abrupt smooth boundary

ACg—11 to 21 inches; light gray (10YR 7/1) silt loam, dark grayish brown (10YR 4/2) moist; moderate fine angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; neutral; abrupt smooth boundary.

Cg1—21 to 48 inches; white (10YR 8/1) silt loam, olive gray (5Y 5/2) moist; common medium distinct mottles that are yellowish brown (10YR 5/6) when moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; common very fine tubular pores; neutral; clear smooth boundary.

Cg2—48 to 52 inches; white (10YR 8/1) very fine sandy loam, light brownish gray (10YR 6/2) moist; common medium distinct mottles that are yellowish brown (10YR 5/6) when moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; common very fine tubular pores; neutral; abrupt smooth boundary.

Cg3—52 to 60 inches; light gray (5Y 7/2) silt loam, olive (5Y 4/3) moist; common medium distinct mottles that are light olive brown (2.5Y 5/6) when moist; massive; slightly hard, friable, slightly sticky and nonplastic; neutral.

An apparent water table is present in December through August. Frequent periods of flooding occur in March through May. The organic surface layer is 5 to 10 inches thick.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 1 or 2 dry or moist.

The ACg horizon has value of 5 to 7 dry and 4 to 6 moist, and it has chroma of 1 or 2 dry or moist.

The Cg horizon has hue of 10YR, 2.5Y, or 5Y, and it has value of 7 or 8 dry and 4 to 7 moist. It is silty clay loam, silt loam, or very fine sandy loam.

Vanbrunt Series

The Vanbrunt series consists of moderately deep, well drained soils on summits, ridges, shoulders, footslopes, and backslopes of hills and mountains. These soils formed in colluvium, residuum, and glacial till derived from granitic rock with a component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 1,800 to 4,400 feet. The average annual precipitation is 14 to 20 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Vanbrunt very stony sandy loam in an area of Vanbrunt-Rock outcrop complex, 20 to 40 percent slopes, about 4 miles northwest of Nespelem; 2,050 feet south and 550 feet west of the northeast corner of sec. 16, T. 31 N., R. 30 E., W.M.:

Oi—2.0 inches to 0.25 inch; needles, twigs, leaves, and cones.

Oe—0.25 inch to 0; moderately decomposed needles, twigs, and leaves.

A1—0 to 3 inches; brown (10YR 5/3) very stony sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; few fine tubular pores; 25 percent pebbles, 5 percent cobbles, and 5 percent stones; medium acid; clear smooth boundary.

A2—3 to 10 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots and common medium and coarse roots; few fine tubular pores; 30 percent pebbles and 10 percent cobbles; medium acid; clear wavy boundary.

Bw—10 to 19 inches; light yellowish brown (10YR 6/4) extremely cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, medium, and coarse roots; few fine tubular pores; 35 percent pebbles and 25 percent cobbles; medium acid; clear wavy boundary.

C—19 to 25 inches; very pale brown (10YR 7/3) very cobbly sandy loam, yellowish brown (10YR 5/4) dry; massive; soft, very friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; few fine tubular pores; 35 percent pebbles and 20 percent cobbles; slightly acid; abrupt wavy boundary.

R—25 to 29 inches; granitic bedrock.

Depth to bedrock is 20 to 40 inches. The particle-size control section is 3 to 8 percent clay and 35 to 70 percent rock fragments. The profile is medium acid or slightly acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 10 to 30 percent pebbles, 5 to 15 percent cobbles, and 5 to 15 percent stones and boulders.

The Bw horizon has value of 6 or 7 dry and 4 or 5

moist. It is 20 to 40 percent pebbles, 15 to 40 percent cobbles, and 0 to 10 percent stones.

The C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 or 3 dry or moist. It is 20 to 50 percent pebbles, 15 to 25 percent cobbles, and 0 to 10 percent stones.

Wannacott Series

The Wannacott series consists of soils that are moderately deep to dense glacial till and are well drained. These soils are on undulating till plains. They formed in intermixed glacial lake sediment and glacial till with loess in the upper part. Slopes are 0 to 15 percent. Elevation is 2,200 to 2,700 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Wannacott silt loam, 0 to 8 percent slopes, about 8 miles west of Disautel; 900 feet south and 600 feet west of the northeast corner of sec. 17, T. 33 N., R. 28 E., W.M.:

A—0 to 10 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine irregular pores; 3 percent pebbles; neutral; clear smooth boundary.

BA—10 to 15 inches; light yellowish brown (10YR 6/4) silt loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine tubular pores; 3 percent pebbles; neutral; clear smooth boundary.

Bt—15 to 22 inches; light brownish gray (2.5Y 6/2) silt loam, olive brown (2.5Y 4/4) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; few faint clay films in pores and on faces of peds; common very fine and fine roots; common very fine tubular pores; 3 percent pebbles; moderately alkaline; abrupt smooth boundary.

Btk—22 to 29 inches; light yellowish brown (2.5Y 6/4) silty clay loam, olive brown (2.5Y 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; common distinct clay films on faces of peds and in pores; few fine roots; few fine tubular pores; 5 percent pebbles; common accumulations of soft powdery secondary lime in cracks and seams; strongly effervescent; strongly alkaline; abrupt smooth boundary.

2C—29 to 35 inches; light yellowish gray (2.5Y 6/2) gravelly sandy loam, olive brown (2.5Y 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; few fine tubular pores; thin dense lake sediment; slightly effervescent; 20 percent pebbles; strongly alkaline; clear smooth boundary.

2Cd—35 to 60 inches; light gray (2.5Y 7/2) dense glacial till that crushes to gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, friable, nonsticky and nonplastic; thin dense lake sediment; 25 percent pebbles; strongly alkaline.

Depth to dense glacial till is 20 to 40 inches. The mollic epipedon is 7 to 14 inches thick. The solum is 21 to 35 inches thick. The particle-size control section is 18 to 35 percent clay and less than 15 percent fine sand or coarser material.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is 0 to 10 percent pebbles. It is neutral or mildly alkaline.

The BA horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is 0 to 10 percent pebbles. It is neutral or mildly alkaline. This horizon is absent in some pedons.

The Bt horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is silt loam or silty clay loam with 0 to 10 percent pebbles. It is mildly alkaline to strongly alkaline.

The Btk horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 to 4 dry or moist. It is silt loam or silty clay loam with 0 to 10 percent pebbles. It is mildly alkaline to strongly alkaline.

The 2Cd horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. The upper part is 15 to 35 percent pebbles, and the lower part is 15 to 50 percent pebbles. The horizon is mildly alkaline to strongly alkaline.

Wapal Series

The Wapal series consists of very deep, somewhat excessively drained soils on terraces and terrace escarpments. These soils formed in glacial outwash with a minor component of volcanic ash and loess. Slopes are 0 to 65 percent. Elevation is 1,600 to 3,500 feet. The average annual precipitation is 16 to 24 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Wapal gravelly sandy loam, 30 to 65 percent slopes, about 23 miles northeast of Nespelem; 1,000 feet south and 175 feet west of the northeast corner of sec. 10, T. 34 N., R. 32 E., W.M.:

Oi—1.5 inches to 0; needles, twigs, and leaves.
A—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark gray (10YR 3/1) moist: weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; common very fine tubular pores; 15 percent pebbles; medium acid; clear wavy boundary.
Bw—5 to 11 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular pores; 15 percent pebbles; medium acid; abrupt wavy boundary.
C—11 to 60 inches; multicolored very gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 40 percent pebbles and 10 percent cobbles; slightly acid.

Depth to the C horizon is 10 to 20 inches. The particle-size control section is 35 to 70 percent rock fragments.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is gravelly or cobbly sandy loam with 5 to 30 percent pebbles, 0 to 25 percent cobbles, and 0 to 5 percent stones. It is medium acid to neutral.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is sandy loam or coarse sandy loam with 15 to 35 percent pebbles, 0 to 50 percent cobbles, and 0 to 5 percent stones. It is medium acid to neutral.

The C horizon commonly is multicolored. The horizon is loamy sand, sand, or coarse sand with 30 to 70 percent pebbles, 5 to 35 percent cobbles, and 0 to 5 percent stones. It is slightly acid or neutral.

Wellscreek Series

The Wellscreek series consists of very deep, well drained soils on fans and on toeslopes, footslopes, and backslopes of hills and mountains. These soils formed in colluvium derived from metasedimentary rock with a small component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 2,000 to 3,200 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Wellscreek very channery loam, 40 to 65 percent slopes, about 14 miles southwest of Inchelium; 1,900 feet south and 1,950 feet east of the northwest corner of sec. 3, T. 20 N., R. 35 E., W.M.:

Oi—4 inches to 1 inch; needles, twigs, cones, and mosses.
Oe—1 inch to 0; moderately decomposed organic matter.
A1—0 to 6 inches; dark grayish brown (10YR 4/2) very channery loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; common very fine tubular pores; 35 percent hard channers and 15 percent soft channers; slightly acid; clear smooth boundary.
A2—6 to 14 inches; brown (10YR 5/3) very channery loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and medium roots; common very fine tubular pores; 40 percent hard channers, 20 percent soft channers, and 5 percent cobbles; neutral; abrupt wavy boundary.
Bw1—14 to 26 inches; yellowish brown (10YR 5/4) extremely cobbly silt loam, dark yellowish brown (10YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and common medium and coarse roots; common very fine tubular pores; 30 percent hard channers, 20 percent soft channers, 25 percent cobbles, and 10 percent stones; neutral; gradual wavy boundary.
Bw2—26 to 42 inches; light yellowish brown (10YR 6/4) extremely channery loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine, fine, medium, and coarse roots; common very fine tubular pores; 55 percent hard channers, 10 percent soft channers, and 20 percent cobbles; slightly acid; gradual wavy boundary.
C—42 to 60 inches; light yellowish brown (10YR 6/4) extremely channery loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; few fine tubular pores; 55 percent hard channers, 15 percent soft channers, and 20 percent cobbles; slightly acid.

The mollic epipedon is 10 to 20 inches thick. The particle-size control section is 18 to 30 percent clay. It is slightly acid or neutral.

The A1 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 to 3 moist. It is channery or very channery loam.

The A2 horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loam or silt loam with 15 to 40 percent hard channers, 0 to 20 percent soft channers, 0 to 10 percent pebbles, and 0 to 5 percent cobbles.

The Bw horizon has hue of 10YR or 7.5YR, value of 4 to 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is loam, silt loam, or clay loam with 20 to 30 percent hard channers, 0 to 25 percent soft channers, 0 to 20 percent pebbles, 0 to 10 percent flagstones, 0 to 30 percent cobbles, and 0 to 10 percent stones.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is loam or clay loam with 30 to 60 percent hard channers, 5 to 25 percent soft channers, 0 to 20 percent pebbles, 5 to 25 percent cobbles, 5 to 15 percent flagstones, and 0 to 10 percent stones.

Whitestone Series

The Whitestone series consists of very deep, well drained soils on shoulders, backslopes, footslopes, and toeslopes of hills and mountains. These soils formed in colluvium and glacial till derived from granitic rock with a small component of loess and volcanic ash. Slopes are 5 to 65 percent. Elevation is 1,700 to 3,700 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Whitestone gravelly sandy loam, 20 to 40 percent slopes, about 4 miles northwest of Nespelem; 1,150 feet north and 250 feet east of the southwest corner of sec. 16, T. 31 N., R. 30 E., W.M.:

Oi—1 inch to 0; needles, twigs, leaves, and cones.

A1—0 to 8 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots and few medium roots; common very fine irregular pores; 20 percent pebbles, 5 percent cobbles, and 1 percent stones; neutral; clear wavy boundary.

A2—8 to 16 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots and few medium roots; common very fine irregular pores; 25 percent pebbles and 5 percent cobbles; neutral; clear wavy boundary.

Bw—16 to 32 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots and few medium roots; common very fine irregular pores; 35 percent pebbles and 5 percent cobbles; slightly acid; clear wavy boundary.

C—32 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine irregular pores; 35 percent pebbles and 5 percent cobbles; slightly acid.

The mollic epipedon is 10 to 18 inches thick. The solum is 20 to 35 inches thick. The particle-size control section is 3 to 8 percent clay and 35 to 60 percent angular granitic rock fragments. The profile is slightly acid or neutral.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry or moist. It is loam, gravelly sandy loam, or very stony sandy loam with 5 to 25 percent pebbles, 0 to 15 percent cobbles, and 0 to 15 percent stones and boulders.

The Bw horizon has value of 5 or 6 dry and 4 or 5 moist, and it has chroma of 3 or 4 dry or moist. It is 20 to 40 percent pebbles, 0 to 25 percent cobbles, and 0 to 5 percent stones.

The C horizon has value of 6 or 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is sandy loam or loamy sand with 25 to 50 percent pebbles, 5 to 30 percent cobbles, and 0 to 5 percent stones.

Wilmont Series

The Wilmont series consists of very deep, well drained soils on toe slopes, footslopes, and backslopes of hills and mountains. These soils formed in residuum and colluvium derived from metasedimentary rock with a mantle of volcanic ash. Slopes are 20 to 65 percent. Elevation is 2,200 to 3,300 feet. The average annual precipitation is 18 to 25 inches, the average annual air temperature is 41 to 44 degrees F, and the frost-free period is 90 to 120 days.

Typical pedon of Wilmont silt loam, 40 to 65 percent slopes, about 16 miles southwest of Inchelium; 550 feet east and 1,975 feet north of the southwest corner of sec. 14, T. 31 N., R. 34 E., W.M.:

Oi—2 inches to 0; needles and twigs.

A—0 to 5 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots and few medium and coarse roots; common very fine tubular pores; 10 percent channers; neutral (NaF pH 10.1); clear wavy boundary.

Bw1—5 to 12 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots, common fine and medium roots, and few coarse roots; common very fine tubular pores; 10 percent channers; neutral (NaF pH 9.8); abrupt wavy boundary.

2Bw2—12 to 17 inches; light yellowish brown (10YR 6/4) very channery sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots and few medium and coarse roots; common very fine tubular pores; 40 percent channers and 5 percent flagstones; neutral; gradual wavy boundary.

2Bw3—17 to 27 inches; light yellowish brown (10YR 6/4) very channery sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; few fine tubular pores; 40 percent channers, 5 percent pebbles, and 10 percent flagstones; neutral; clear wavy boundary.

2C1—27 to 47 inches; brown (10YR 5/3) extremely channery loamy sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine, fine, and medium roots; few fine tubular pores; 55 percent channers, 5 percent pebbles, 10 percent flagstones, and 2 percent stones; neutral; clear wavy boundary.

2C2—47 to 60 inches; dark grayish brown (10YR 4/2) extremely channery sand, very dark grayish brown (10YR 3/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 50 percent channers, 10 percent pebbles, 20 percent flagstones, and 2 percent stones; neutral.

The mantle of volcanic ash is 7 to 14 inches thick. The solum is 20 to 30 inches thick. The particle-size control section is 35 to 70 percent rock fragments and 7 to 15 percent clay.

The A horizon has value of 4 or 5 dry and chroma of 2 or 3 dry or moist. It is 0 to 10 percent channers.

The Bw horizon has value of 5 or 6 dry and 3 or 4 moist, and it has chroma of 3 or 4 dry or moist. It is silt loam or loam with 5 to 35 percent channers and 0 to 10 percent cobbles and flagstones.

The 2Bw horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 to 4 dry or moist. It is loam or sandy loam with 20 to 45 percent channers, 0 to 20 percent pebbles, 0 to 10 percent flagstones, 0 to 15 percent cobbles, and 0 to 15 percent soft rock fragments.

The 2C1 horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 5 or 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is loam, sandy loam, or loamy sand with 30 to 55 percent channers, 0 to 20 percent pebbles, 0 to 10 percent flagstones, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 15 percent soft rock fragments.

The 2C2 horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 4 to 6 dry and 3 or 4 moist, and chroma of 2 to 4 dry or moist. It is sandy loam, loamy sand, or sand with 30 to 60 percent channers, 0 to 20 percent pebbles, 0 to 20 percent flagstones, 0 to 10 percent cobbles, 0 to 5 percent stones, and 0 to 15 percent soft rock fragments.

Winchester Series

The Winchester series consists of very deep, excessively drained soils on outwash terraces, terrace escarpments, and dunes. These soils formed in glacial outwash sand that has been reworked by wind in some areas. Slopes are 0 to 60 percent. Elevation is 900 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Typical pedon of Winchester loamy coarse sand, 0 to 10 percent slopes, about 11 miles south of Keller; 2,300 feet north and 300 feet east of the southwest corner of sec. 18, T. 28 N., R. 33 E., W.M.:

A—0 to 9 inches; grayish brown (10YR 5/2) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; common very fine tubular pores; 5 percent fine pebbles; neutral; abrupt smooth boundary.

AC—9 to 15 inches; brown (10YR 5/3) sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; few fine tubular pores; 5 percent fine pebbles; mildly alkaline; clear smooth boundary.

C1—15 to 29 inches; yellowish brown (10YR 5/4) sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores;

5 percent fine pebbles; neutral; abrupt smooth boundary.
C2—29 to 48 inches; pale brown (10YR 6/3) sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; 5 percent fine pebbles; mildly alkaline; abrupt smooth boundary.
C3—48 to 60 inches; multicolored sand; single grain; loose, nonsticky and nonplastic; neutral.

The particle-size control section is about 75 percent very coarse, coarse, and medium sand, 0 to 5 percent clay, and 0 to 10 percent pebbles. The surface layer is less than 1 percent organic matter. Depth to secondary carbonates is 30 to 60 inches or more.

The A and AC horizons have chroma of 2 or 3 dry or moist. Soil structure is absent in some pedons. These horizons are slightly acid or neutral. They are absent in some pedons.

The C horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 2 to 4 dry or moist. It is sand or coarse sand. It is neutral or mildly alkaline.

Winthrop Series

The Winthrop series consists of very deep, somewhat excessively drained soils on alluvial fans and terraces. These soils formed in mixed alluvium and glacial outwash. Slopes are 0 to 20 percent. Elevation is 1,300 to 2,700 feet. The average annual precipitation is 14 to 16 inches, the average annual air temperature is 45 to 47 degrees F, and the frost-free period is 100 to 130 days.

Typical pedon of Winthrop stony sandy loam, 0 to 20 percent slopes, about 7 miles northeast of Nespelem; 1,300 feet south and 950 feet east of the northwest corner of sec. 7, T. 31 N., R. 32 E., W.M.:

A—0 to 10 inches; very dark grayish brown (10YR 3/2) stony sandy loam, black (10YR 2/1) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common very fine tubular pores; 25 percent pebbles and 5 percent stones; neutral; clear smooth boundary.
2C1—10 to 21 inches; light brownish gray (10YR 6/2) extremely gravelly sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common very fine and few fine roots; few fine tubular pores; 50 percent pebbles, 10 percent cobbles, and 2 percent stones; neutral; gradual smooth boundary.
2C2—21 to 60 inches; light brownish gray (10YR 6/2) extremely gravelly coarse sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 60 percent pebbles, 5 percent cobbles, and 1 percent stones; neutral.

The mollic epipedon is 8 to 15 inches thick. The particle-size control section is 35 to 70 percent rock fragments.

The A horizon has value of 3 to 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 or 2 moist. It is 15 to 35 percent pebbles and 5 to 10 percent cobbles and stones. It is neutral or slightly acid.

The 2C horizon has hue of 10YR or 2.5Y, value of 6 or 7 dry and 4 or 5 moist, and chroma of 2 or 3 dry or moist. It is sand or coarse sand with 35 to 60 percent pebbles, 0 to 20 percent cobbles, and 0 to 5 percent stones.

Wynhoff Series

The Wynhoff series consists of moderately deep, well drained soils on shoulders, backslopes, and footslopes of hills and mountains. These soils formed in colluvium and residuum derived from granitic rock, rhyodacite porphyry, and soft metasedimentary rock, with an admixture of loess. Slopes are 8 to 65 percent. Elevation is 1,400 to 3,400 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days.

Typical pedon of Wynhoff stony loam, 30 to 65 percent slopes, about 8 miles southeast of Keller; 1,600 feet north and 350 feet west of the southeast corner of sec. 34, T. 29 N., R. 33 E., W.M.:

A1—0 to 7 inches; brown (10YR 5/3) stony loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine irregular pores; 20 percent pebbles, 5 percent cobbles, and 2 percent stones; neutral; gradual wavy boundary.
A2—7 to 12 inches; yellowish brown (10YR 5/4) gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; 25 percent pebbles and 5 percent cobbles, neutral; clear wavy boundary.
Bw1—12 to 19 inches; light yellowish brown (10YR 6/4) very gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; 35 percent pebbles, 5 percent cobbles, and 2 percent stones; neutral; clear wavy boundary.
Bw2—19 to 28 inches; light yellowish brown (10YR

6/4) very gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine irregular pores; 40 percent pebbles, 10 percent cobbles, and 2 percent stones; neutral; clear smooth boundary.

C—28 to 34 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; 50 percent pebbles, 10 percent cobbles, and 5 percent stones; neutral; clear wavy boundary.

R—34 to 38 inches; rhyodacite bedrock.

The mollic epipedon is 10 to 18 inches thick. Depth to bedrock is 20 to 40 inches. The particle-size control section is 8 to 15 percent clay and 40 to 70 percent rock fragments. The profile is neutral or mildly alkaline.

The A horizon has value of 4 to 6 dry and 2 or 3 moist, and it has chroma of 2 to 4 dry and 2 or 3 moist. The lower part of the horizon is loam or sandy loam. The horizon is 20 to 30 percent pebbles and 5 to 10 percent cobbles and stones.

The Bw horizon has value of 5 to 7 dry and 3 to 5 moist, and it has chroma of 3 or 4 dry or moist. It is loam, fine sandy loam, or sandy loam with 30 to 60 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones.

The C horizon has value of 6 or 7 dry and 4 to 6 moist, and it has chroma of 3 or 4 dry or moist. It is loam, sandy loam, or coarse sandy loam with 35 to 60 percent pebbles, 5 to 25 percent cobbles, and 0 to 5 percent stones.

Xeric Torriorthents

Xeric Torriorthents consist of very deep, well drained to excessively drained soils on terraces and terrace escarpments. These soils formed in glacial outwash, glaciofluvial material, and glacial lake sediment. The parent material commonly is mixed by colluvial action and is stratified. Slopes are 0 to 65 percent. Elevation is 800 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, and the frost-free period is 140 to 180 days.

Reference pedon of Xeric Torriorthents, escarpments, 30 to 65 percent slopes, about 5 miles northwest of Elmer City; 1,800 feet south and 1,700 feet west of the northeast corner of sec. 35, T. 30 N., R. 30 E., W.M.:

A—0 to 8 inches; brown (10YR 5/3) extremely cobbly loamy sand, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine irregular pores; 35 percent rounded pebbles, 30 percent cobbles, and 5 percent stones; neutral; gradual wavy boundary.

C1—8 to 33 inches; pale brown (10YR 6/3) cobbly loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 10 percent rounded pebbles and 10 percent cobbles; neutral; abrupt wavy boundary.

2C2—33 to 45 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; few fine roots; few fine tubular pores; 10 percent rounded pebbles; mildly alkaline; abrupt wavy boundary.

3C3—45 to 60 inches; light gray (10YR 7/2) sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; 5 percent rounded pebbles; violently effervescent; mildly alkaline.

The particle-size control section is 2 to 15 percent clay and 15 to 60 percent rock fragments. The profile is neutral or mildly alkaline.

The A horizon has chroma of 2 or 3 dry or moist. It is extremely cobbly loamy sand or gravelly fine sandy loam with 15 to 40 percent pebbles, 0 to 30 percent cobbles, and 0 to 5 percent stones. This horizon is absent in some pedons.

The C horizon has value of 6 or 7 dry and 4 to 6 moist, and it has chroma of 2 or 3 dry or moist. It is silty clay loam to coarse sand with 5 to 40 percent pebbles and 0 to 30 percent cobbles. Stratification is common.

Xerochrepts

Xerochrepts consist of very deep, well drained soils on backslopes of mountains. These soils formed in colluvium derived from rhyodacite, metasedimentary rock, and granitic rock. In some areas the upper part has an admixture of volcanic ash. Slopes are 40 to 90 percent. Elevation is 1,800 to 4,000 feet. The average annual precipitation is 17 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

Reference pedon of Xerochrepts in an area of Xerochrepts-Rubble land-Rock outcrop complex,

40 to 90 percent slopes, about 22 miles northeast of Nespelem; 2,100 feet west and 900 feet south of the northeast corner of sec. 16, T. 34 N., R. 32 E., W.M.:

Oi—1.5 inches to 0; needles, leaves, and twigs.
A—0 to 3 inches; brown (10YR 5/3) very cobbly loam, dark brown (10YR 3/3) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; many very fine irregular pores; 20 percent angular pebbles and 30 percent cobbles; neutral; clear wavy boundary.
Bw1—3 to 7 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 4/3) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots and few coarse roots; few fine tubular pores; 20 percent angular pebbles and 40 percent cobbles; neutral; gradual wavy boundary.
Bw2—7 to 24 inches; very pale brown (10YR 7/3) extremely cobbly loam, brown (10YR 5/3) moist; weak very fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and medium roots; few fine tubular pores; 15 percent angular pebbles and 60 percent cobbles; neutral; gradual wavy boundary.
C—24 to 60 inches; very pale brown (10YR 7/3) extremely cobbly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; 15 percent angular pebbles and 75 percent cobbles; neutral.

Volcanic ash that has bulk density of 0.75 to 0.95 grams per cubic centimeter is in some pedons to a depth of 7 to 14 inches. The particle-size control section is 3 to 15 percent clay and 35 to 90 percent rock fragments. The profile is neutral to medium acid.

The A horizon has value of 4 or 5 dry and 2 or 3 moist, and it has chroma of 2 or 3 dry and 1 to 3 moist. It is loam or silt loam with 25 to 45 percent pebbles, 15 to 30 percent cobbles, and 0 to 5 percent stones.

The Bw horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 3 to 6 dry or moist. It is loam or sandy loam with 15 to 75 percent pebbles, 5 to 65 percent cobbles, and 0 to 5 percent stones.

The C horizon has value of 5 to 7 dry and 4 or 5 moist, and it has chroma of 2 to 4 dry or moist. It is loam or sandy loam with 15 to 80 percent pebbles, 20 to 80 percent cobbles, and 0 to 5 percent stones.

Formation of the Soils

Soils are a collection of three-dimensional natural bodies that contain living matter and support or are capable of supporting plants. The properties and characteristics of a soil are determined by soil-forming processes that result from (1) the physical and mineralogical characteristics of the parent material; (2) the climate under which the soil has formed or accumulated; (3) the living organisms, both plant and animals, including man; (4) the topography or relief; and (5) the length of time over which the processes of soil formation have occurred. In this section the soil-forming factors are discussed separately; however, these factors function interdependently.

Many soil-forming processes act together to form a soil profile. These processes include additions to the soil surface, transformations within the soil, vertical transfers (up and down), and removals (Birkeland, 1974). Additions include organic matter from plants and animals, ions from rainwater, and particles carried and deposited by wind and water. Transformations include organic compound formation during organic matter decomposition as well as weathering of rocks and primary minerals to form secondary minerals and other products. Vertical transfers mainly consist of translocation of clay, soluble salts, organic compounds, and ions from one part of the soil to another by water moving through the soil. Removals consist of the leaching of soluble salts and other substances in solution out of the soil profile.

Parent Material

Parent material is the unconsolidated mineral or organic material from which soils develop. Soil properties and characteristics are strongly influenced by the nature of the parent material, especially in the younger soils.

Soils in this survey area have formed in many kinds of parent material, including residuum and colluvium derived from metamorphic, sedimentary, granitic, and volcanic rock; glacial deposits including glacial till, glacial outwash, eolian sand, and glaciolacustrine sediment; volcanic ash; loess; alluvium; and organic material.

Residuum and colluvium derived from bedrock.—The oldest rocks of the survey area are the late Paleozoic metamorphic and sedimentary rock known collectively as the Covada Group (Pardee, 1918). These rocks are concentrated in the eastern and north-central parts of the survey area and consist mainly of phyllite, schist, quartzite, slate, graywacke, shale, and limestone. Soils that formed in material derived from these rocks are in the loamy-skeletal family, and the rock fragments commonly consist of flattened channers and flagstones because of the platy, interbedded nature of the bedrock. Depth to bedrock is 10 to 60 inches or more. Depth is strongly influenced by the topographic position. The Raisio, Rufus, Oxerine, and Wilmont series are examples of soils that formed in this material.

The next oldest and most extensive rocks of the survey area are the Mesozoic and Tertiary granitic rocks of the Colville Batholith. The dominant rocks are quartz monzonite, granite, granodiorite, quartz diorite, diorite, and granitic gneiss. These granitic rocks occur in a complex, intricate pattern, but they behave similarly in terms of soil formation. In nonglaciated areas, the bedrock commonly is highly weathered and the soils are 10 to 60 inches deep to a paralithic contact. The soils in these areas are mainly in the coarse-loamy or loamy-skeletal family, and the rock fragments are dominantly fine gravel. Soils of the Centralpeak, Dinkelman, Moses, Skanid, and Spokane series are examples. In glaciated areas, the granitic bedrock has been scoured and abraded by glacial ice that has removed the weathered material, exposing hard, relatively unweathered rock. The soils in these areas are dominantly 10 to 40 inches deep, are in the loamy-skeletal family, and have gravel-sized to boulder-sized rock fragments. Soils of the Buhrig, Mineral, Vanbrunt, and Swakane series are examples.

Volcanic rock and related rocks of the early Tertiary comprise an extensive area in the central part of the survey area. These rocks are divided into three formations: (1) the O'Brien Creek Formation, composed mainly of tuff and breccia; (2) the Sanpoil Volcanics, composed largely of flows and some interbedded tuff; and (3) Scatter Creek rhyodacite,

consisting of dikes and other small intrusive bodies (Staatz, 1964). These formations consist dominantly of rhyodacite, andesite, and quartz latite. Soils that formed in material weathered from these rocks are 4 to 60 inches deep or more. Depth is highly dependent on the topographic position. These soils are mainly in the loamy-skeletal family, and they are associated with areas of Rock outcrop and Rubble land. Soils of the Baldknob, Thout, Johntom, Inkler, Northstar, and Louiecreek series are examples. Flows of late Tertiary Columbia River Basalt formed the Okanogan Plateau, known locally as Timentwa Flats, in the southwestern part of the survey area (Baker and Nummendal, 1978). Other small plateau remnants of this basalt are in the south-central part of the survey area, generally in proximity with the Columbia River. These flows make up the youngest rocks in the survey area. Most soils in the survey area formed in material weathered from this basalt and have a component of loess. Depth to bedrock is 4 to 60 inches or more, depending on the topographic position. Soils of the Anders, Badge, and Bakeoven series are examples.

Glacial deposits.—During the Pleistocene, approximately 75 percent of the survey area was covered by glacial ice of the Cordilleran Ice Sheet (Richmond and others, 1965). The ice sheet in the survey area was made up of three main lobes. These were (1) the Okanogan Lobe, which covered the western half of the survey area, except for the upper elevations of the Moses and Armstrong Mountains; (2) the Sanpoil Lobe, which was confined within the valley walls of the Sanpoil River Valley, in the central part of the survey area, and ended just north of the confluence with the Columbia River (the exact terminus is in dispute); and (3) the Columbia River Lobe, which covered the extreme eastern part of the survey area.

The glaciation resulted in deposits of glacial till of varying thickness covering much of the survey area. Glacial till is unsorted, nonstratified material deposited directly by and underneath a glacier. It consists of a heterogeneous mixture of sand, silt, clay, and rock fragments. The mineralogy of the till commonly is similar to that of the local bedrock; for example, glacial till in an area with granitic bedrock is composed mainly of material of granitic origin, with only a small component of erratic material from other sources. Soils in this survey area that formed in glacial till are mainly in the coarse-loamy and loamy-skeletal families. The substrata generally are compacted and have high bulk density because of the weight of the glacial ice. The Apex, Conconully, Donavan, Manley, and Nevine series are examples of soils that formed in glacial till and have a component or mantle of volcanic ash and loess.

Glacial outwash from melting glaciers has formed terraces, kames, and eskers consisting mainly of sorted and stratified sand, gravel, and cobbles. Some terraces are mainly composed of nongravelly coarse-loamy material, called glaciofluvial deposits in this survey. Outwash deposits are most extensive along the Columbia, Okanogan, and Sanpoil Rivers, but they also occur along many of the secondary streams. Many of the soils that formed in this material also have a mantle of volcanic ash and loess. The Hallcreek, Kiehl, Pogue, Skaha, and Wapal series are examples of soils that formed in sandy-skeletal glacial outwash. The Bisbee, Ewall, and Quincy series are examples of soils that formed in nongravelly, sandy glacial outwash that has been reworked by wind. The Cashmere, Phoebe, Picard, Scala, and Stapaloop series are examples of soils that formed in coarse-loamy glaciofluvial deposits.

Glaciolacustrine sediment is extensive along the Columbia River and its tributaries, from the vicinity of Barnaby Creek downstream to the confluence with the Nespelem River and along the Sanpoil River from its confluence with the Columbia River to the vicinity of Bridge Creek. Other less extensive deposits are along the Okanogan River and in the Disautel and Moses Meadows areas. Glaciolacustrine sediment consists of stratified silt, clay, and sand deposited in glacial lakes. This sediment commonly is interbedded or laminated with varves. A major glacial lake was formed when the Okanogan Ice Lobe periodically blocked the Columbia River in the vicinity of Grand Coulee Dam, forming Lake Columbia (Richmond and others, 1965). Other smaller glacial lakes were formed throughout the survey area by similar processes. Soils that formed in this sediment are dominantly in the coarse-silty, fine-silty, or fine families and have a mantle of volcanic ash and loess. The Cedonia, Elvedere, Hodgson, Kewach, Martella, and Nespelem series are examples of soils that formed in glaciolacustrine sediment.

Volcanic ash.—Two major volcanic eruptions in the Cascade Mountains deposited volcanic ash over most of the survey area. These were the eruptions of Glacier Peak in the North Cascades about 12,000 years ago and of Mount Mazama (Crater Lake) in the Southern Oregon Cascades about 7,500 years ago (Fryxell, 1965). Physical characteristics of the volcanic ash include low bulk density (less than 0.85 grams per cubic centimeter), a dominance of silt and very fine sand-sized particles, weak structural development, and relatively high available water capacity (greater than 0.18 inch per inch). Chemical properties include a

high ratio of 15-bar water content and cation exchange capacity to measured clay, and pH value in sodium fluoride of more than 9.4.

The volcanic ash commonly occurs as a discrete mantle on north-facing soils at an elevation of about 2,000 feet or more, and it overlies a wide variety of parent material. The Nevine, Manley, Moses, and Resner series are examples of soils that formed in this material. On south-facing soils and on north-facing soils at an elevation of less than about 2,000 feet, the volcanic ash commonly occurs as a component of the surface horizons and it may be mixed with loess or the underlying parent material. Soils of the Conconully, Donavan, Merkel, and Spokane series are examples. Thick alluvial deposits of volcanic ash are in wet depressions. Soils of the Emdent, Bossburg, and Uncas series formed in these deposits.

Loess.—Many of the soils in the survey area have a mantle of loess that commonly is mixed with volcanic ash. The Broadax and Reardan series are examples of soils that formed entirely in loess that is believed to be of at least two different geologic ages, the older of which is identified by a strongly developed argillic horizon. The origin of the loess is complex, but it is believed to be from glaciolacustrine sediment in the vicinity and from redeposited loess from the Columbia Plateau to the south.

Alluvium and organic material.—The major streams in the survey area and many of the secondary streams have formed flood plains and stream terraces composed of recent alluvium. The character of the alluvium is dependent on the velocity and volume of the floodwaters and on the soils and geology of adjacent upland areas. Soils that formed in alluvium commonly are stratified because the velocity of the floodwater varies during formation. Many of the soils have textures that become coarser as depth increases, which reflects a gradual reduction of stream gradients over geologic time. Most of the alluvial soils in the survey area are in the coarse-loamy family. The Cubcreek, Narcisse, Okanogan, Poween, Ralsen, Ret, and Sanpoil series are examples.

Alluvial fans are common in the drier areas of the survey area. These fans form in areas where a stream with relatively steep gradient emerges from a narrow valley onto a nearly level or gently sloping plain or terrace. The Beverly, Cashmont, Logy, Rebecca, and Winthrop series are examples of soils that formed on alluvial fans.

Organic soils are in back swamps of flood plains and in wet depressions on outwash terraces, till plains, ground moraines, and other glacial landforms. The parent material consists of organic matter from water-tolerant plants in various stages of decomposition. Organic soils commonly have thin strata of alluvium or overlie alluvium that commonly is high in content of volcanic ash. Borosaprists, Medisaprists, and Histosols are examples of organic soils in the survey area. The Bossburg and Uncas series are examples of soils that have a thin organic surface layer over volcanic ash.

Climate

Precipitation and temperature are the primary climatic factors that affect soil development. Precipitation influences the amount of moisture entering the soil, which affects the physical, chemical, and biological processes of soil formation, including the weathering of minerals, organic matter production and decomposition, elevation of colloids, leaching of ions, and rate of erosion. Soil moisture and temperature also influence the rate at which these soil-forming processes occur. The higher the soil temperature and moisture content, the higher the rate of these processes.

The climate in the survey area is strongly influenced by the rainshadow created by the Cascade Mountains to the west. The average annual precipitation is 9 to 35 inches, increasing progressively from west to east and from south to north. Most of the precipitation occurs from late in fall through spring, with only occasional thunderstorms occurring in summer and early in fall. The average annual air temperature is 37 to 51 degrees F, and the frost-free period is 70 to 180 days. Precipitation increases and the temperature and frost-free period decrease as elevation increases.

For purposes of soil classification, five broad climatic zones are recognized in the project area. These zones are defined in the following paragraphs.

Zone 1.—This driest zone includes soils that have an aridic moisture regime bordering on xeric and a mesic temperature regime. Elevation is 800 to 1,800 feet. The average annual precipitation is 9 to 12 inches, the average annual air temperature is 49 to 51 degrees F, the frost-free period is 140 to 180 days. The dominant plant community is bunchgrass-shrub steppe.

Most of the soils in this zone have received sufficient organic matter to form a thin mollic epipedon. The subsoil has been weathered and altered to form a weakly developed cambic horizon. In the well drained soils, carbonates generally have been leached to a depth of more than 20 inches. The Cashmere, Farrell,

Pogue, and Ellisforde series are examples of soils in this zone. The Quincy and Skaha series are examples of soils in this zone that are sandy throughout and have not developed diagnostic horizons.

Zone 2.—This zone includes soils that have a xeric moisture regime and a mesic temperature regime. Elevation is 1,200 to 3,000 feet. The average annual precipitation is 12 to 15 inches, the average annual air temperature is 47 to 49 degrees F, and the frost-free period is 110 to 150 days. The dominant plant community is bunchgrass-shrub steppe with occasional, widely spaced coniferous trees.

The soils in this zone have a well-developed mollic epipedon that generally is darker and thicker than that in the soils of zone 1. Carbonates have been leached to a depth of more than 30 inches, except in soils that have restricted permeability. Most of the soils have a well-developed cambic horizon. The Conconully, Owhi, Haley, Ginnis, and Timentwa series are examples. The Achimin and Morical series are examples of soils that have formed an argillic horizon and are in older, mostly nonglaciated landscape positions.

Zone 3.—This zone includes forested soils that have a xeric moisture regime and a mesic temperature regime. Elevation is 1,400 to 3,000 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 45 to 48 degrees F, and the frost-free period is 100 to 130 days. These soils have a mollic epipedon that is intermediate in development between that of the soils in zones 1 and 2. The Hudnut and Scala series are examples of soils that have an ochric epipedon. Carbonates have been leached to a depth of more than 60 inches, except in some soils that have restricted permeability. The Cedonia, Donavan, Garrison, Phoebe, Spokane, and Stevens series are examples of soils that have a well-developed cambic horizon. The Bernhill, Georgecreek, Hodgson, and Reardan series are examples of nonglaciated soils that have developed an argillic horizon and are in stable landscape positions.

Zone 4.—This zone is colder than zone 3. It includes forested soils that have a xeric moisture regime and a frigid temperature regime. Elevation is 2,000 to 5,000 feet. The average annual precipitation is 15 to 25 inches, the average annual air temperature is 42 to 44 degrees F, and the frost-free period is 90 to 120 days.

In soils such as those of the Aits, Centralpeak, Elbowlake, Merkel, Nevine, and Oxerine series, the content of organic carbon is 1 to 4 percent but the soil color does not meet the requirements for a mollic epipedon. Soils in this zone that have a mollic epipedon commonly are on southerly aspects, are the warmest in this zone, or have restricted drainage. The Dinkelman, Mineral, Republic, and Ret series are examples of soils that have a well-developed cambic horizon. The Brusher, Henneway, Kewach, Martella, Neuske, and Renha series are examples of soils that have developed an argillic horizon and are in stable landscape positions.

Zone 5.—This coldest zone includes forested soils that have a xeric moisture regime bordering on udic and a cryic temperature regime. Elevation is 3,500 to 6,700 feet. The average annual precipitation is 20 to 35 inches, the average annual temperature is 37 to 41 degrees F, and the frost-free period is 70 to 100 days. The content of organic carbon in the soils in this zone is 1 to 4 percent, but the soil color does not meet the requirements for a mollic epipedon. The Buhrig, Manley, Moses, Resner, and Togo series are examples of soils that have a strongly developed cambic horizon. The Lynxcreek series is an example of soils that have an argillic horizon and are in cold areas.

Living Organisms

Vegetation, micro-organisms, and higher animals, including man, influence the rate and characteristics of certain chemical and physical processes of soil development. Vegetation is the most important biotic factor in soil formation, because it represents the main source of organic matter. The O and A horizons in forested soils develop as a result of the accumulation and decomposition of organic matter. Organic matter promotes structural development and stability, which is important to air and water movement. The available water capacity and cation exchange capacity increase with additions of organic matter. Plants cycle nutrients through the soils, and they provide cover that reduces runoff and erosion. Plant roots improve aeration and permeability by increasing soil porosity.

Soil micro-organisms contribute to the decomposition of organic matter. Nitrogen mineralization and atmospheric nitrogen fixation, by micro-organisms alone or with legumes, provide nutrients for plant growth. Micro-organisms also are active in the transformation of phosphorous, sulfur, iron, and other elements in the soil.

Earthworms, rodents, insects, and other burrowing animals influence organic matter accumulation and decomposition. They also improve soil aeration and permeability. They mix the soil, which tends to accelerate the soil-forming processes and alterations.

When the soil moisture content is high, cultivation can cause puddling of fine-textured soils, and when

the soil is dry, cultivation produces hard clods that are difficult to break. Excessive cultivation, even when the soil moisture content is optimum, can compact the soil and thus destroy natural aggregation and reduce aeration and porosity. Conversion of forested soils to pastureland or hayland results in the darkening and thickening of the A horizon, especially in irrigated areas. Additions of organic matter, fertilizer, and other soil amendments changes many chemical and physical soil properties, such as the pH value, base saturation, and soil tilth. Cultivation of sloping soils, some logging practices, and other forms of soil disturbance that expose the mineral surface can accelerate runoff and erosion.

The vegetation in the survey area can be divided into the same five broad zones described in this section under the heading “Climate.” The effects of vegetation on soil formation are difficult to separate from those of climate, because the two factors are highly interdependent. See the sections “Forest Overstory Vegetation, Management, and Productivity,” “Forest Understory Vegetation, Management, and Productivity,” and “Rangeland” for more detailed information on the vegetation in the survey area.

The rangeland soils in the 9- to 12-inch precipitation zone have minimal mollic epipedon development because the plant cover is relatively sparse and thus additions of organic matter are small. Soils of the Malott and Pogue series are examples.

The rangeland soils in the 12- to 15-inch precipitation zone have a thicker, darker colored mollic epipedon with greater structural development because the plant community is more productive and higher quantities of organic matter are added to the soil. Soils of the Conconully, Ginnis, and Timentwa series are examples.

The forested soils in this survey area have a thinner A horizon, and the organic matter content in these soils decreases more rapidly as depth increases than it does in the rangeland soils. These differences are partly a result of the way in which the organic matter enters the soils. On forested soils, most of the organic matter received is in the form of litter on the soil surface. On the rangeland soils, most of the organic matter is received from decomposing roots of grasses and other herbaceous plants.

Base saturation and pH value of the forested soils generally are lower than those in the rangeland soils. This is partly because of the higher precipitation and rate of leaching in the forested areas, but other factors related directly to the forest vegetation also contribute to these differences. Organic acids produced from the decomposition of forest litter increase soil acidity, and some decomposition products of forest litter act as chelating agents of iron and aluminum compounds, which increase the solubility of these compounds and result in lower base saturation and pH value.

Topography

The configuration of the land surface, or topography, affects soil formation in a number of ways. Aspect affects the amount of solar radiation received at a given site, which influences soil temperature and evapotranspiration. It also affects the deposition and accumulation of eolian material such as loess. Soils on north- and east-facing slopes receive less solar radiation; therefore, they are cooler and more moist than those on south- and west-facing slopes. Soils on north-facing slopes commonly have a more dense plant cover than those on south-facing slopes, which results in a higher organic matter content and provides more protection from soil erosion.

Topographic position can also influence soil depth. In the mountains, the soils on ridges and shoulders are shallow to moderately deep to bedrock. Soils of the Swakane and Vanbrunt series are examples. Water erosion and colluvial action, such as soil creep and landslides, remove soil and geologic material from ridges, shoulders, and backslopes and deposit it in downslope positions. The Whitestone series is an example of very deep soils in areas where soil material has accumulated on footslopes and toeslopes.

Soils on steep slopes have minimal profile development because the rate of removal of soil material by water erosion and mass movement is nearly as high as or higher than the rate of soil development. The Skaha and Spens series are examples of weakly developed soils. On stable, nearly level to gently sloping uplands, soils commonly become well developed over time. The rate of erosion is much slower than the rate of soil formation. The Georgecreek and Reardan series are examples of soils that have developed an argillic horizon.

Topographic position can also affect the soil moisture regime. Most upland soils are well drained, but the soils on flood plains and low stream terraces commonly exhibit restricted drainage as evidenced by a seasonal high water table and the presence of mottles. The Coxlake and Ret series are examples of somewhat poorly drained soils. The Ralsen and Sanpoil are examples of poorly drained soils.

In the drier, glaciated areas of the survey area are closed depressions that do not have sufficient outlets for the removal of surface water. The Emdent and Gooseflats series are examples of soils in these depressions. These soils have a seasonal high water

table and a high concentration of salts and exchangeable sodium.

Time

Weathering of rocks and minerals and the development of soil horizons are dependent on time. The degree of soil development changes over time. Soil horizons require less than one hundred years to many thousands of years to develop.

Soil horizon development in this survey area is most pronounced in stable landscape positions in nonglaciated areas. The Achimin and Friedlander series are examples of soils that have had sufficient time to form a strongly developed argillic horizon that has clay films.

Most of the soils that formed in glacial deposits have had time to develop a cambic horizon. The Cedonia, Conconully, Donavan, and Republic series are examples of soils that have a cambic horizon. The Bernhill, Hodgson, Martella, and Neuske series are examples of glacial soils that have parent material that is high in content of clay and that have formed an argillic horizon.

The hardness of the bedrock and the characteristics of the rock fragments in soil also are dependent on time. The Mineral series, which is mainly in glaciated areas, is an example of soils that are underlain by hard granitic rock. Glacial scouring has removed weathered material, exposing fresh rock and interrupting the weathering processes. As a result, the rock fragments in the Mineral soils are gravel, cobbles, and stones. The Centralpeak series, in contrast, is an example of soils that are underlain by highly weathered granitic rock. This rock has not been subject to the scouring and scraping action of glaciers; therefore, it has weathered for a longer period of time and the rock fragments are fine gravel.

The accumulation of organic matter that forms a mollic epipedon occurs in a relatively short period of time under certain conditions. The Okanogan and Poween series are examples of soils that formed in recent alluvium and have a well developed mollic epipedon, but they do not have diagnostic subsurface horizons. Occasional or rare periods of flooding have deposited recent alluvium on these soils, periodically interrupting the soil-forming processes.

Aquic Xerofluvents are examples of soils on flood plains that are subject to occasional periods of flooding. These soils have not had sufficient time to form genetic horizons. Each flood episode deposits a new layer of alluvium on the soil surface so that the soil-forming processes must begin anew. On very steep slopes, the rate of erosion and mass movement is nearly as high or higher than the rate of soil formation. The Skaha series and Xeric Torriorthents are examples of soils on very steep terrace escarpments.

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Glossary

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

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

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

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

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

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

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.

Andesite. A fine-grained volcanic rock consisting mainly of plagioclase feldspar with small amounts of pyroxene, hornblende, or biotite. It is dark colored, mainly shades of gray or green.

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

Annual cropping. Seeding and harvesting successive winter and/or spring crops in the same field each year.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and mottling.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aridic (soil taxonomy). A soil moisture regime that has no moisture available for plants for more than half the cumulative time that the soil temperature at a depth of 20 inches is above 41 degrees F and that has no period as long as 90 consecutive days when moisture is available for plants while the soil temperature is above 41 degrees.

Ashy (soil taxonomy). Soils in which 60 percent or more of the entire soil, by weight, is volcanic ash, cinders, and pumice; less than 30 percent, by volume, is 2 millimeters in diameter or larger.

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 2
Low	2 to 3.75
Moderate	3.75 to 5
Moderately high	5 to 7.5
High	7.5 to 10
Very high	more than 10

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.

Backswamp. The extensive marshy, depressed area of a flood plain between the natural levee of a stream and the valleyside or terrace.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

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.

Basalt. Fine-grained volcanic rock consisting mainly of plagioclase and pyroxene, but commonly also containing olivine. It is black to dark gray.

Base course. The layer or layers of specified or selected material of designed thickness placed on a road subbase or subgrade for various purposes such as to distribute a load, provide drainage, or minimize frost action.

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

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Batholith. A huge, domed mass of intrusive igneous rock such as granite.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Biomass. The total amount of living material in a particular habitat or area; an expression of the total weight of a given population of organisms.

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

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

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

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 above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Breccia, volcanic. A more or less indurated rock consisting mainly of coarse angular volcanic ejecta in a matrix of fine tuff.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Bulk density. The mass of soil per unit bulk volume. Moist bulk density refers to the oven-dry weight of a given volume of soil with a moisture content at or near field moisture capacity.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Cambic horizon (soil taxonomy). A mineral soil horizon that is loamy very fine sand or finer textured and has soil structure rather than rock structure. The cambic horizon contains some weatherable minerals, and it is characterized by alterations or removals as indicated by mottling or gleying, stronger chroma or redder hue than in underlying horizons, or removal of carbonates.

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.

Carbonates. Chemical compounds containing the carbonate ion $C0_3$ in combination with bases such as calcium, magnesium, potassium, and sodium.

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 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that are less than 16 inches long and that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Chroma. The relative purity, strength, or saturation of color (see Munsell notation).

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clayey (soil taxonomy). A particle-size class in which the fine-earth fraction is 35 percent clay or more and rock fragment content is less than 35 percent by volume.

Climax forest stage. The culminating succession stage. Overstory vegetation is dominated by trees that are climax for the site. Vertical depth of the understory and overstory canopies is at a maximum. Seedlings to maximum-size mature trees are present in varying amounts, resulting in an uneven-aged stand.

Climax plant community. See Historic climax plant community.

Climax tree. The most competitive tree capable of growing on a particular site. In this survey area, the most competitive coniferous tree normally is the most shade-tolerant species and can reproduce in closed stand conditions.

Coarse-loamy (soil taxonomy). A loamy particle-size class that is at least 15 percent fine sand or coarser, including fragments as much as 3 inches in diameter, and is less than 18 percent clay in the fine-earth fraction.

Coarse-silty (soil taxonomy). A loamy particle-size class that is less than 15 percent fine sand or coarser, including fragments as much as 3 inches in diameter, and is less than 18 percent clay in the fine-earth fraction.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

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.

Compaction. The increase in soil bulk density as a result of applied loads or pressure. Compaction reduces porosity, water infiltration, and root penetration.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Concentrated flow erosion. An erosion process whereby water accumulates in narrow channels and removes the soil material to considerable depths.

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.

Coniferous. Pertaining to plants of the Coniferales order of the Gymnospermae subdivision. Coniferous plants have cone fruit and are commonly, but not always, evergreen. Examples include ponderosa pine, Douglas-fir, and western larch.

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 retains residue on the soil surface after seeding to protect the soil from erosion. It includes no-till farming, strip tillage, minimum tillage, chemical fallow, stubble mulching, and other forms of noninversion tillage.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Cordilleras ice sheet. The glacial ice sheet that covered much of the northern half of North America, from the eastern face of the Rocky Mountains to the Pacific Ocean, during the Pleistocene.

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.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cryic (soil taxonomy). A soil temperature regime in which the mean annual soil temperature at a depth of 20 inches ranges from 33 to 46 degrees F. The mean summer soil temperature is less than 47 degrees for soils that have an O horizon.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Cutoff blanket. A layer of impermeable material placed between a road subgrade and subbase. It is used to restrict the movement of water into the subgrade thereby reducing the risk of damage from frost action.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

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

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (dense material) (in tables). A very firm, massive layer that has a bulk density of more than 1.7 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Deciduous. Pertaining to plants that lose their leaves in fall.

Diorite. A coarse-grained igneous rock consisting mainly of plagioclase but with smaller amounts of hornblende, biotite, and pyroxene. Quartz is absent or sparse. (See Quartz diorite.)

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Displacement. The horizontal movement of soil caused by scraping or machine gouging. It commonly occurs when using a blade for disposal of forest slash and for site preparation. Use of tractors can also result in displacement.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Dolomite. A sedimentary rock consisting mainly of the mineral dolomite, which is a carbonate of calcium magnesium.

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.

Drop structure. A structure used to stabilize the head of a gully. It essentially reduces the flow gradient thereby reducing water velocity and erosion.

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.

Duripan (soil taxonomy). A mineral soil horizon that is cemented by silica to the point that air-dry fragments will not slake in water or hydrochloric acid. A duripan may also have accessory cement such as calcium carbonate and iron oxide.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct climax 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.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion hazard, water. The susceptibility of a soil to erosion by moving water. The erosion hazard classes for cropland are based on a bare surface without roots, and the classes for forestland and rangeland are based on a bare surface with common roots in the surface layer (clearcut areas or areas where a broadcast burn or range fire has

occurred). The classes and estimated soil loss, expressed as tons per acre per year, are:

Slight	less than 5
Moderate	5 to 20
Severe	20 to 50
Very severe	more than 50

Erosion hazard, wind. The susceptibility of a soil to erosion by wind. The classes are based on a bare surface. The classes and corresponding wind erodibility groups are:

None	8
Slight	5, 6, 7
Moderate	4, 4L
Severe	2, 3
Very severe	1

Erratic (geology). Refers to a rock fragment transported by glacial ice or floating ice that is different from the bedrock in the area in which it is deposited.

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.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

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 well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field border. A strip of perennial vegetation established at the edge of a field by planting or by converting it from trees to herbaceous vegetation and shrubs.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Field strips. Systematic arrangement of alternating strips of crops across the general slope to reduce water erosion. A strip of grass or a close-growing crop is alternated with a clean-tilled crop or fallow.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine (soil taxonomy). A clayey particle-size class that is 35 to 59 percent clay in the fine-earth fraction.

Fine-loamy (soil taxonomy). A loamy particle-size class that is at least 15 percent fine sand or coarser, including fragments as much as 3 inches in diameter, and is 18 to 34 percent clay in the fine-earth fraction.

Fine-silty (soil taxonomy). A loamy particle-size class that is less than 15 percent fine sand or coarser, including fragments as much as 3 inches in diameter, and is 18 to 34 percent clay in the fine-earth fraction.

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

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

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. 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.

Foliated. Refers to metamorphic rock that exhibits parallel structure or layering.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and

backslopes) and downslope sites of deposition (toeslopes).

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

Frigid (soil taxonomy). A soil temperature regime in which the mean annual soil temperature at a depth of 20 inches ranges from 33 to 46 degrees F. The mean summer soil temperature is more than 47 degrees for soils that have an O horizon. The difference between the mean winter soil temperature and the mean summer soil temperature is more than 9 degrees.

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.

Granite. A coarse-grained igneous rock consisting mainly of quartz and feldspar, with more orthoclase than plagioclase (See Granodiorite.)

Granitic. Term generally applied to granite or granitelike rock. It is used when referring to granite, granodiorite, quartz monzonite, quartz diorite, diorite, and granitic gneiss.

Granitic gneiss. A crystalline, banded metamorphic rock of granitic composition.

Granodiorite. A coarse-grained igneous rock consisting mainly of quartz and feldspar, with more plagioclase than orthoclase. (See Granite.)

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

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

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

Graywacke. An indurated sedimentary rock that consists mainly of sand-sized grains but contains fragments of feldspar, quartz, and ferromagnesian minerals.

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

Group selection system. Uneven-aged silvicultural system in which small groups of trees are periodically removed from a large area so that age and size classes of the reproduction are mixed.

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

Habitat type. All land capable of producing a similar climax plant community.

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.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

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.

Herb (herbaceous plant). Any flowering plant except those that develop persistent woody bases and stems above ground.

Herbaceous stage. A forest successional stage in which the understory vegetation in a stand is dominantly grasses, grasslike plants, and forbs under full or nearly full sunlight. The canopy cover

generally is less than 15 percent, and it has little or no effect on the understory vegetation.

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

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Histic epipedon (soil taxonomy). A thin, organic soil horizon that is saturated with water at some time during the year unless it is artificially drained. This horizon is at or near the surface of a mineral soil.

Historic climax plant community. The plant community that was best adapted to the unique combination of factors associated with the ecological site. It was in a natural dynamic equilibrium with the historic biotic, abiotic, and climatic factors on its ecological site in North America at the time of European immigration and settlement.

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.

Hue. One of the three properties of color. The property by which colors of the spectrum are distinguished from one another. Hues range from red through yellow, green, blue, and violet.

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.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Indurated. Refers to having a hard, brittle consistency as a result of particles being held together by cementing substances such as silica, calcium carbonate, and iron. An indurated layer can be broken by a sharp blow of a hammer.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as

contrasted with percolation, which is movement of water through soil layers or material.

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

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.26	slow
0.26 to 0.40	moderately slow
0.40 to 0.60	moderately fast
More than 0.60	fast

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:
Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.
Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.
Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.
Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Kame terrace. A ridge consisting of stratified sand and gravel deposited by a meltwater stream flowing between a melting glacier and a higher valley wall or lateral moraine.

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.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Levee. An embankment constructed alongside a river or creek to prevent flooding of adjacent land during periods of high water.

Limestone. Sedimentary rock consisting mainly of calcium carbonate ($CaCO_3$).

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.

Lithic contact (soil taxonomy). A boundary between soil and underlying material that consists of unweathered bedrock that is too hard to dig with a spade.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy (soil taxonomy). A particle-size class in which the fine-earth fraction is loamy very fine sand, fine sand, or finer, the content of clay is less than 35 percent, and rock fragments make up less than 35 percent by volume.

Loamy-skeletal (soil taxonomy). A particle-size class in which rock fragments 2 millimeters in diameter or larger make up 35 percent or more by volume. The fine-earth fraction is loamy.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marble. A metamorphic rock consisting mainly of calcite or dolomite, or a combination of both.

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.

Mature forest stage. A successional stage in which the most shade-tolerant adapted tree species are well represented (more than 50 percent composition) and are dominant in the middle to upper canopy layers. Trees generally are more than 9 inches in diameter at breast height, and the canopy cover is more than 25 percent.

Mean. The average of a collection of pieces of data obtained by adding all the pieces and dividing by the total number of pieces.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesic (soil taxonomy). A soil temperature regime in which the mean annual temperature at a depth of 20 inches ranges from 47 to 58 degrees F. The difference between the mean winter soil temperature and the mean summer soil temperature is more than 9 degrees.

Mesozoic. The era of geologic time from approximately 63 to 255 million years ago (radiometric dates). The era between the Paleozoic and Cenozoic eras.

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.

Metasedimentary rock. Partially metamorphosed sedimentary rock.

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.

Moisture control section (soil taxonomy). The layer within a soil profile used to determine the soil moisture regime. The upper boundary is the depth to which a dry soil is moistened by 1 inch of water in 24 hours. The lower boundary is the depth to which a dry soil is moistened by 3 inches of water in 48 hours.

Mollic epipedon (soil taxonomy). A surface horizon that is dark colored and relatively thick, contains at least 0.6 percent organic carbon (1 percent organic matter), and has a base saturation of more than 50 percent when measured at pH 7. It is not massive and hard or very hard when dry.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mulching. The application of any material, such as straw, sawdust, leaves, or plastic film, on the soil surface to protect the soil from risks such as erosion, crusting, freezing, and evaporation.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. 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.

Ochric epipedon (soil taxonomy). A surface horizon of mineral soil that is too light in color, too high in chroma, too low in organic carbon, or too thin to be a mollic or histic epipedon.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Overstory. The trees in a forest stand that form the upper crown cover. (See Understory.)

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Paleozoic. The era of geologic time from approximately 255 to 580 million years ago (radiometric dates). The era between the Precambrian and Mesozoic eras.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, duripan, fragipan, claypan, plowpan,* and *traffic pan*.

Paralithic contact (soil taxonomy). A boundary between soil and coherent underlying material that can be dug with difficulty with a spade. It is referred to as weathered bedrock.

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.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

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.)

Phyllite. A fine-textured, foliated metamorphic rock that is intermediate in metamorphic grade between slate and schist. Mica crystals impart a silky sheen to the cleavage surfaces.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plant association. A plant community that has reached the culmination of plant succession; a climax plant community.

Plant community. An assemblage of plants living together, reflecting no particular ecological status; a vegetative complex unique in its combination of plants.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Pleistocene. The epoch of geologic time from approximately 10,000 to 2 million years ago. The earlier of the two epochs comprising the Quaternary period. Also called the Glacial epoch.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Pole stage. A forest successional stage in which the vegetation of a stand is dominantly a moderately dense to very dense overstory of trees that have minimal vertical crown depth. The trees generally range from about 5 to 9 inches in diameter at breast height, and the canopy cover normally exceeds 35 percent.

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 Historic climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Puddling. The mechanical destruction of soil structure under wet soil conditions by compression and shearing. It results in the total deformation of soil particle arrangement to a massive or structureless state.

Quartz diorite. A coarse-grained igneous rock consisting mainly of plagioclase with smaller amounts of quartz, hornblende, and biotite. (See Granodiorite.)

Quartzite. A nonfoliated metamorphic rock consisting mainly of quartz sand cemented with quartz.

Quartz latite. A fine-grained volcanic rock consisting mainly of quartz, plagioclase, and orthoclase with minor amounts of biotite and hornblende. Phenocrysts are common. This rock is the extrusive equivalent of quartz monzonite.

Quartz monzonite. A coarse-grained igneous rock consisting mainly of plagioclase, orthoclase, and quartz with minor amounts of biotite and hornblende. (See Granite and Granodiorite.)

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.

Ravel. Dry, unconsolidated rock and soil material that when exposed in a cutback will move downslope seeking a stable angle of repose.

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
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

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.

Rhyodacite. A fine-grained volcanic rock consisting mainly of quartz and feldspar, with more plagioclase than orthoclase. Phenocrysts are common. Ryodacite is the extrusive equivalent of granodiorite.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

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.

Sandy (soil taxonomy). A particle-size class in which the texture of the fine-earth fraction is sand or loamy sand but not loamy very fine sand or very fine sand; it is less than 35 percent rock fragments by volume.

Sandy-skeletal (soil taxonomy). A particle-size class that is 35 percent or more by volume rock fragments 2 millimeters in diameter or larger. The fine-earth fraction is sandy.

Sapling/pole stage. A forest successional stage in which the vegetation of a stand is dominantly saplings and pole-sized trees (generally 2 to 9 inches in diameter at breast height). The canopy cover and understory production are intermediate between the herbaceous or shrub stage and the pole stage.

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.

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.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Schist. A medium- to coarse-grained, foliated metamorphic rock in which the platy minerals are clearly visible. Micaceous minerals commonly are present.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

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.

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.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub stage. A forest successional stage in which the vegetation is dominantly shrubs and/or tree seedlings. The overstory canopy cover normally ranges from 0 to 20 percent.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

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.

Slate. A fine-grained metamorphic rock that exhibits strong cleavage or layering.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	1 to 8 percent
Moderately sloping	3 to 8 percent
Strongly sloping	4 to 16 percent
Moderately steep	10 to 30 percent
Steep	20 to 60 percent
Very steep	45 percent and higher

Slough. Fragmentary material that when moist can crumble and fall away from cutbanks.

Slump. A mass movement process characterized by a landslide involving shearing and rotary movement of a generally independent mass of rock or earth along a curved slip surface. The mass (slump) has its axis parallel to the slope from which it descends. A slump surface commonly exhibits a reversed slope facing uphill.

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

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

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 creep. Slow mass movement of soil and soil material down relatively steep slopes, primarily under the influence of gravity but facilitated by saturation with water and alternate freezing and thawing.

Soil depth. Refers to the potential rooting depth. The soil depth classes, in inches, are:

Very shallow	less than 10
Shallow	10 to 20
Moderately deep	20 to 40
Deep	40 to 60
Very deep	more than 60

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.

Stand. An aggregation of trees or other growth in a specific area that is sufficiently uniform in species composition, age arrangement, and condition to be distinguishable from the forest or other growth in adjoining areas.

Steppe. An extensive area covered dominantly with grass, shrubs, and herbaceous vegetation and few, if any, trees.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strip tillage. Tillage operations performed in narrow bands separated by bands of soil essentially undisturbed by the tillage equipment.

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.

Subbase. A layer of material laid on the natural soil surface under a road base for strengthening purposes.

Subgrade. The soil surface or native rock prepared and compacted to support a road or structure; the top surface of a roadbed upon which subbase, base, or surface course is constructed.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Succession. The progressive development of vegetation toward its highest ecological expression, the climax; replacement of one plant community by another.

Successional stage. Stage or recognizable condition of a plant community that occurs during its development from bare soil to climax.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A and AB 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.

Tertiary. The period of geologic time from approximately 2 to 63 million years ago (radiometric dates). The earlier of the two geologic periods comprising the Cenozoic era.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tillage operation. The act of applying one or more tillage actions by a distinct mechanical force to all or part of the soil mass.

Tillage pan. A compacted soil layer resulting from the downward pressure from tillage implements and vehicles. Synonym: plowpan.

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.

Topography. The relative positions and elevations of the physical features of an area. The configuration of the land surface. (See Relief.)

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Udic (soil taxonomy). A soil moisture regime in which the moisture control section is not dry for 90 cumulative days in most years. Also, the soils are not dry for more the 45 consecutive days during the four months following the summer solstice.

Understory. The portion of vegetation beneath the overstory up to a height of about 4.5 feet. (See Overstory.)

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.

Value, color. The relative lightness or intensity of color. (See Munsell notation.)

Varve. A sedimentary layer or a lamina or sequence of

laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Volcanic ash. Uncemented material consisting of fragments less than 4 millimeters in diameter that has been ejected from a volcanic vent.

Volcanic rock. Igneous rock that is in molten form or has been ejected from vents at the earth's surface. Synonym: extrusive rock.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Wind strips. Wind-resistant crops grown in strips alternating with row crops or fallow and arranged at angles to minimize adverse effects of wind (includes any herbaceous vegetative wind barrier that reduces wind velocity).

Xeric (soil taxonomy). A soil moisture regime common to a climate with cool, moist winters and warm, dry summers. The soils are dry in the moisture control section for more than 45 consecutive days during the four months following the summer solstice and are moist for more than 45 consecutive days during the four months following the winter solstice.

Young forest stage. A successional stage in which the overstory vegetation of a stand is dominantly shade-intolerant successional trees. Trees generally are more than 9 inches in diameter at breast height, and the canopy cover exceeds 25 percent. Shade-tolerant climax tree species can be absent to nearly well represented (less than 50 percent).

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Nespelem, WA)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*		*In*
January	32.5	15.3	23.9	51	-19	2	1.23	0.56	1.80	4	7.3
February	41.9	22.4	32.1	60	-4	11	1.07	0.39	1.63	3	3.2
March	52.1	27.1	39.6	67	10	58	1.12	0.52	1.64	3	1.0
April	61.9	32.3	47.1	84	18	191	1.03	0.37	1.63	2	0.0
May	70.5	39.1	54.8	90	23	411	1.30	0.60	1.91	3	0.0
June	80.3	46.3	63.3	98	32	656	0.87	0.46	1.28	2	0.0
July	87.2	50.2	68.7	103	35	866	0.56	0.12	1.01	1	0.0
August	87.4	50.2	68.8	104	36	881	0.67	0.20	1.27	1	0.0
September	77.4	41.4	59.4	95	26	556	0.71	0.16	1.15	2	0.0
October	63.5	32.8	48.1	82	17	251	0.85	0.30	1.31	2	0.1
November	45.1	27.3	36.2	64	8	30	1.86	0.88	2.84	5	2.3
December	34.3	18.0	26.1	50	-14	1	1.92	1.03	2.70	6	10.3
Yearly:											
Average	61.2	33.5	47.4	---	---	---	---	---	---	---	---
Extreme	110	-25	---	105	-17	---	---	---	---	---	---
Total	---	---	---	---	---	3,916	13.19	9.63	14.87	34	24.1

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Nespelem, WA)

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 11	May 25	June 23
2 years in 10 later than--	May 3	May 19	June 14
5 years in 10 later than--	April 18	May 8	May 28
First freezing temperature in fall:			
1 year in 10 earlier than--	September 26	September 18	September 3
2 years in 10 earlier than--	October 2	September 23	September 8
5 years in 10 earlier than--	October 5	October 3	September 18

Table 3.--Growing Season

(Recorded in the period 1961-90 at Nespelem, WA)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
9 years in 10	147	132	86
8 years in 10	157	138	98
5 years in 10	176	150	121
2 years in 10	195	162	144
1 year in 10	205	168	156

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
1	Achimin silt loam, 0 to 8 percent slopes	0	560	560	*
2	Achimin-Calcic Pachic Haploxerolls complex, 3 to 30 percent slopes	0	968	968	*
3	Aeneas fine sandy loam, 0 to 5 percent slopes	180	2,751	2,931	0.2
4	Aeneas fine sandy loam, 5 to 10 percent slopes	164	292	456	*
5	Ahtanum silt loam, 0 to 3 percent slopes	0	322	322	*
6	Aits silt loam, dry, 5 to 20 percent slopes	4,043	0	4,043	0.3
7	Aits silt loam, dry, 20 to 40 percent slopes	2,289	0	2,289	0.2
8	Aits silt loam, sandy substratum, 0 to 8 percent slopes	211	0	211	*
9	Anders silt loam, 0 to 8 percent slopes	210	394	604	*
10	Andic Cryaquepts, 0 to 3 percent slopes	340	476	816	*
11	Annum silt loam, 8 to 25 percent slopes	186	702	888	*
12	Annum silt loam, 8 to 25 percent north slopes	62	727	789	*
13	Annum silt loams complex, 8 to 25 percent slopes	233	549	782	*
14	Apex silt loam, 5 to 20 percent slopes	2,425	0	2,425	0.2
15	Apex silt loam, 20 to 40 percent slopes	2,310	0	2,310	0.2
16	Apex silt loam, 40 to 65 percent slopes	384	0	384	*
17	Apex loam, dry, 5 to 20 percent slopes	238	3,951	4,189	0.3
18	Apex loam, dry, 20 to 40 percent slopes	172	2,414	2,586	0.2
19	Apex loam, dry, 40 to 65 percent slopes	182	169	351	*
20	Aquic Xerofluvents, cool, 0 to 3 percent slopes	4,261	2,667	6,928	0.5
21	Aquic Xerofluvents, moist, 0 to 3 percent slopes	2,105	0	2,105	0.2
22	Aquic Xerofluvents, warm, 0 to 3 percent slopes	563	2,643	3,206	0.2
23	Badge very stony silt loam, 25 to 65 percent slopes	950	866	1,816	0.1
24	Badge-Rubble land complex, 25 to 65 percent slopes	182	1,169	1,351	*
25	Badland	20	229	249	*
26	Bakeoven very cobbly silt loam, 2 to 25 percent slopes	103	185	288	*
27	Bakeoven-Olical complex, 0 to 30 percent slopes	645	480	1,125	*
28	Bakeoven-Timentwa-Rock outcrop complex, 0 to 30 percent slopes	0	8,021	8,021	0.6
29	Baldknob-Thout, dry-Rock outcrop complex, 5 to 20 percent slopes	3,800	69	3,869	0.3
30	Baldknob-Thout, dry,-Rock outcrop complex, 20 to 65 percent slopes	10,699	1,932	12,631	0.9
31	Barnellcreek silt loam, 5 to 15 percent slopes	394	867	1,261	*
32	Bearspring loam, 20 to 40 percent slopes	2,124	244	2,368	0.2
33	Bearspring cobbly loam, 40 to 65 percent slopes	6,979	773	7,752	0.6
34	Bernhill loam, dry, 0 to 5 percent slopes	401	0	401	*
35	Bernhill loam, dry, 5 to 20 percent slopes	348	1,577	1,925	0.1
36	Beverly gravelly loamy sand, 2 to 25 percent slopes	48	1,858	1,906	0.1
37	Bisbee loamy fine sand, warm, 0 to 20 percent slopes	611	423	1,034	*
38	Bisbee loamy fine sand, warm, 20 to 40 percent slopes	321	326	647	*
39	Boesel fine sandy loam, 0 to 3 percent slopes	606	107	713	*
40	Bong sandy loam, 0 to 30 percent slopes	392	534	926	*
41	Bong sandy loam, 30 to 70 percent slopes	8	389	397	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
42	Bong sandy loam, cool, 0 to 8 percent slopes	582	0	582	*
43	Borgeau loam, 8 to 30 percent slopes	2,672	0	2,672	0.2
44	Borgeau loam, 30 to 65 percent slopes	4,782	0	4,782	0.4
45	Borgeau-Rock outcrop complex, 30 to 65 percent slopes	910	0	910	*
46	Borosaprists, 0 to 2 percent slopes	401	355	756	*
47	Bossburg muck, 0 to 2 percent slopes	133	420	553	*
48	Broadax silt loam, dry, 0 to 8 percent slopes	545	891	1,436	0.1
49	Broadax silt loam, dry, 8 to 15 percent slopes	158	660	818	*
50	Brusher silt loam, 20 to 40 percent slopes	2,462	0	2,462	0.2
51	Brusher silt loam, moist, 5 to 35 percent slopes	3,038	0	3,038	0.2
52	Brusher silt loam, warm, 0 to 20 percent slopes	545	0	545	*
53	Brusher silt loam, warm, 20 to 40 percent slopes	1,104	0	1,104	*
54	Buhrig very stony loam, 20 to 40 percent slopes	898	306	1,204	*
55	Buhrig very stony loam, 40 to 65 percent slopes	1,116	1,643	2,759	0.2
56	Buhrig silt loam, shaly substratum, 30 to 65 percent slopes	420	0	420	*
57	Buhrig-Rock outcrop complex, 20 to 40 percent slopes	141	950	1,091	*
58	Buhrig-Rock outcrop complex, 40 to 65 percent slopes	523	717	1,240	*
59	Canteen silt loam, 20 to 40 percent slopes	3,878	0	3,878	0.3
60	Canteen silt loam, 40 to 65 percent slopes	3,328	0	3,328	0.2
61	Canteen silt loam, cool, 20 to 40 percent slopes	1,451	0	1,451	0.1
62	Canteen silt loam, cool, 40 to 65 percent slopes	1,596	0	1,596	0.1
63	Capoose silt loam, 20 to 40 percent slopes	1,240	120	1,360	*
64	Capoose silt loam, 40 to 65 percent slopes	543	0	543	*
65	Capoose-Rock outcrop complex, 20 to 40 percent slopes	4,434	29	4,463	0.3
66	Capoose-Rock outcrop complex, 40 to 65 percent slopes	2,128	8	2,136	0.2
67	Cashmere fine sandy loam, 0 to 5 percent slopes	429	2,838	3,267	0.2
68	Cashmere fine sandy loam, 5 to 10 percent slopes	14	1,347	1,361	*
69	Cashmere fine sandy loam, 10 to 25 percent slopes	7	642	649	*
70	Cashmere fine sandy loam, 25 to 50 percent slopes	46	361	407	*
71	Cashmont gravelly sandy loam, fan, 3 to 15 percent slopes	36	2,547	2,583	0.2
72	Cashmont gravelly sandy loam, fan, 15 to 30 percent slopes	0	312	312	*
73	Cedonia silt loam, 0 to 5 percent slopes	1,580	27	1,607	0.1
74	Cedonia silt loam, 5 to 15 percent slopes	901	39	940	*
75	Cedonia silt loam, 15 to 30 percent slopes	1,075	444	1,519	0.1
76	Cedonia silt loam, 30 to 65 percent slopes	1,767	0	1,767	0.1
77	Centralpeak loams association, 5 to 20 percent slopes	1,919	210	2,129	0.2
78	Centralpeak loams association, 20 to 40 percent slopes	11,671	561	12,232	0.9
79	Centralpeak loams association, 40 to 65 percent slopes	5,562	70	5,632	0.4

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
80	Centralpeak loam, warm, 5 to 20 percent slopes	2,250	28	2,278	0.2
81	Centralpeak loam, warm, 20 to 40 percent slopes	5,863	0	5,863	0.4
82	Centralpeak loam, warm, 40 to 65 percent slopes	477	0	477	*
83	Centralpeak, warm-Brusher, moist complex, 5 to 30 percent slopes	1,819	0	1,819	0.1
84	Centralpeak-Rock outcrop association, 30 to 65 percent slopes	2,555	136	2,691	0.2
85	Chumstick-Rock outcrop complex, 5 to 20 percent slopes	254	468	722	*
86	Chumstick-Rock outcrop complex, 20 to 65 percent slopes	4,103	2,921	7,024	0.5
87	Codylake loam, 5 to 20 percent slopes	361	315	676	*
88	Codylake loam, 20 to 40 percent slopes	472	20	492	*
89	Codylake loam, 40 to 65 percent slopes	3,666	160	3,826	0.3
90	Colockum loam, 8 to 15 percent slopes	51	536	587	*
91	Colockum stony loam, 3 to 25 percent slopes	7	1,174	1,181	*
92	Colockum bouldery loam, 25 to 65 percent slopes	0	325	325	*
93	Conconully fine sandy loam, 8 to 15 percent slopes	22	3,214	3,236	0.2
94	Conconully fine sandy loam, 15 to 30 percent slopes	0	1,289	1,289	*
95	Conconully stony fine sandy loam, 3 to 25 percent slopes	0	12,794	12,794	0.9
96	Conconully stony fine sandy loam, 25 to 65 percent slopes	0	5,777	5,777	0.4
97	Conconully stony fine sandy loam, 25 to 65 percent north slopes	0	3,181	3,181	0.2
98	Conconully bouldery fine sandy loam, 5 to 30 percent slopes	106	11,639	11,745	0.9
99	Conconully-Bakeoven complex, 3 to 25 percent slopes	0	950	950	*
100	Conconully-Rock outcrop complex, 5 to 30 percent slopes	0	9,089	9,089	0.7
101	Conconully-Rock outcrop complex, 30 to 65 percent slopes	0	4,428	4,428	0.3
102	Conconully-Swakane-Rock outcrop complex, 3 to 30 percent slopes	0	1,396	1,396	0.1
103	Couleedam-Rock outcrop complex, 30 to 70 percent slopes	2,455	15,075	17,530	1.3
104	Coxlake silt loam, 0 to 3 percent slopes	128	1,327	1,455	0.1
105	Cryofluvents, 0 to 8 percent slopes	1,220	741	1,961	0.1
106	Cubcreek fine sandy loam, 0 to 3 percent slopes	1,733	360	2,093	0.2
107	Cumulic Haploxerolls, 3 to 10 percent slopes	74	985	1,059	*
108	Dart loamy sand, warm, 0 to 15 percent slopes	864	214	1,078	*
109	Dart loamy coarse sand, warm, 40 to 65 percent slopes	227	136	363	*
110	Dart, warm-Springdale complex, 5 to 30 percent slopes	308	9	317	*
111	Dart, warm-Springdale complex, 30 to 65 percent slopes	384	0	384	*
112	Dehart gravelly loam, 8 to 30 percent slopes	1,327	39	1,366	0.1
113	Dehart gravelly loam, 30 to 65 percent slopes	3,508	18	3,526	0.3
114	Dehart-Phoebe, dry complex, 30 to 65 percent slopes	428	0	428	*
115	Dehart-Rock outcrop complex, 8 to 30 percent slopes	1,539	0	1,539	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
116	Dehart-Rock outcrop complex, 30 to 65 percent slopes	698	0	698	*
117	Dinkelman loam, 5 to 20 percent slopes	2,375	59	2,434	0.2
118	Dinkelman loam, 20 to 40 percent slopes	7,654	115	7,769	0.6
119	Dinkelman gravelly loam, 40 to 65 percent slopes	6,371	613	6,984	0.5
120	Disautel very fine sandy loam, 0 to 8 percent slopes	63	1,412	1,475	0.1
121	Disautel very fine sandy loam, 8 to 15 percent slopes	0	1,004	1,004	*
122	Disautel-Nespelem complex, 3 to 20 percent slopes	0	299	299	*
123	Disautel-Rock outcrop complex, 3 to 30 percent slopes	0	1,027	1,027	*
124	Donavan sandy loam, warm, 5 to 15 percent slopes	242	3,201	3,443	0.3
125	Donavan sandy loam, warm, 15 to 30 percent slopes	117	828	945	*
126	Donavan bouldery sandy loam, warm, 5 to 20 percent slopes	0	3,723	3,723	0.3
127	Donavan bouldery sandy loam, warm, 20 to 40 percent slopes	67	2,154	2,221	0.2
128	Donavan loam, dry, 5 to 15 percent slopes	3,939	9,035	12,974	1.0
129	Donavan loam, dry, 15 to 30 percent slopes	2,021	3,967	5,988	0.4
130	Donavan loam, dry, 30 to 65 percent slopes	680	299	979	*
131	Donavan bouldery loam, dry, 5 to 20 percent slopes	13	2,095	2,108	0.2
132	Donavan bouldery loam, dry, 20 to 40 percent slopes	3	695	698	*
133	Donavan, dry-Goldlake complex, 0 to 15 percent slopes	153	454	607	*
134	Donavan, dry-Northstar complex, 5 to 30 percent slopes	18	1,183	1,201	*
135	Donavan, warm-Rock outcrop complex, 5 to 20 percent slopes	16	2,900	2,916	0.2
136	Donavan, dry-Rock outcrop complex, 5 to 20 percent slopes	544	574	1,118	*
137	Donavan, dry-Rock outcrop complex, 20 to 40 percent slopes	716	911	1,627	0.1
138	Donavan, warm-Rock outcrop complex, 20 to 40 percent slopes	99	1,214	1,313	*
139	Duleylake loam, 0 to 8 percent slopes	11	532	543	*
140	Elbowlake silt loam, 5 to 20 percent slopes	466	0	466	*
141	Elbowlake silt loam, 20 to 40 percent slopes	2,153	0	2,153	0.2
142	Elbowlake silt loam, 40 to 65 percent slopes	3,850	0	3,850	0.3
143	Elbowlake silt loam, warm, 5 to 20 percent slopes	1,011	0	1,011	*
144	Elbowlake silt loam, warm, 20 to 40 percent slopes	2,712	0	2,712	0.2
145	Elbowlake silt loam, warm, 40 to 65 percent slopes	1,635	0	1,635	0.1
146	Ellisforde silt loam, 0 to 5 percent slopes	112	1,133	1,245	*
147	Ellisforde silt loam, 5 to 10 percent slopes	123	351	474	*
148	Ellisforde silt loam, 10 to 25 percent slopes	9	349	358	*
149	Elvedere silt loam, 15 to 30 percent slopes	17	561	578	*
150	Elvedere stony silt loam, 3 to 25 percent slopes	0	1,074	1,074	*
151	Elvedere stony silt loam, 25 to 45 percent slopes	0	381	381	*
152	Elvedere-Leahy silt loams complex, 0 to 15 percent slopes	0	1,271	1,271	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
153	Emdent silt loam, 0 to 3 percent slopes	955	4,856	5,811	0.4
154	Emdent silt loam, wet, 0 to 2 percent slopes	274	4,855	5,129	0.4
155	Ewall coarse sand, 0 to 10 percent slopes	1,585	229	1,814	0.1
156	Ewall coarse sand, 10 to 25 percent slopes	1,117	16	1,133	*
157	Ewall loamy fine sand, 0 to 10 percent slopes	399	376	775	*
158	Ewall loamy fine sand, 10 to 25 percent slopes	380	457	837	*
159	Ewall gravelly loamy sand, 30 to 60 percent slopes	1,642	1,209	2,851	0.2
160	Farrell fine sandy loam, 0 to 5 percent slopes	777	2,299	3,076	0.2
161	Farrell fine sandy loam, 5 to 10 percent slopes	157	1,222	1,379	0.1
162	Farrell fine sandy loam, 10 to 25 percent slopes	8	954	962	*
163	Farrell very bouldery fine sandy loam, 0 to 20 percent slopes	0	243	243	*
164	Fivelakes extremely bouldery sandy loam, 30 to 50 percent slopes	0	358	358	*
165	Fivelakes fine sandy loam, moist, 0 to 5 percent slopes	0	555	555	*
166	Fivelakes stony loam, 0 to 25 percent slopes	298	791	1,089	*
167	Fivelakes stony loam, 30 to 65 percent slopes	294	639	933	*
168	Fivelakes extremely bouldery loam, 0 to 30 percent slopes	0	563	563	*
169	Friedlander silt loam, 0 to 20 percent slopes	2,035	0	2,035	0.1
170	Friedlander silt loam, 20 to 40 percent slopes	1,294	0	1,294	*
171	Friedlander silt loam, dry, 0 to 20 percent slopes	825	0	825	*
172	Garrison loam, 0 to 5 percent slopes	2,072	2,032	4,104	0.3
173	Garrison loam, 5 to 15 percent slopes	720	527	1,247	*
174	Garrison gravelly loam, 15 to 30 percent slopes	506	0	506	*
175	Georgecreek silt loam, 5 to 20 percent slopes	1,259	166	1,425	0.1
176	Georgecreek silt loam, 20 to 40 percent slopes	1,728	247	1,975	0.1
177	Georgecreek silt loam, warm, 5 to 20 percent slopes	543	0	543	*
178	Georgecreek silt loam, warm, 20 to 40 percent slopes	682	0	682	*
179	Ginnis stony sandy loam, 30 to 65 percent slopes	155	74	229	*
180	Ginnis loam, 15 to 35 percent slopes	263	1,323	1,586	0.1
181	Ginnis loam, 15 to 35 percent north slopes	225	255	480	*
182	Ginnis loams complex, 15 to 35 percent slopes	179	829	1,008	*
183	Ginnis cobbly loams complex, 15 to 35 percent slopes	28	884	912	*
184	Ginnis-Conconully complex, 5 to 30 percent slopes	36	1,499	1,535	0.1
185	Ginnis-Conconully complex, 30 to 65 percent slopes	68	3,232	3,300	0.2
186	Ginnis-Rock outcrop complex, 30 to 65 percent slopes	338	521	859	*
187	Glenrose silt loam, 8 to 15 percent slopes	410	0	410	*
188	Glenrose silt loam, 15 to 30 percent slopes	560	0	560	*
189	Goddard silt loam, 0 to 20 percent slopes	1,076	1,021	2,097	0.2
190	Goddard silt loam, 20 to 40 percent slopes	372	897	1,269	*
191	Goddard silt loam, 40 to 65 percent slopes	231	81	312	*
192	Goldlake silt loam, 0 to 8 percent slopes	244	1,129	1,373	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
193	Gooseflats fine sandy loams complex, 0 to 2 percent slopes	0	1,532	1,532	0.1
194	Growden channery silt loam, 20 to 50 percent slopes	349	0	349	*
195	Hadencreek silt loam, 0 to 8 percent slopes	58	450	508	*
196	Haley fine sandy loam, 0 to 5 percent slopes	209	1,081	1,290	*
197	Haley fine sandy loam, 5 to 10 percent slopes	408	422	830	*
198	Haley fine sandy loam, 10 to 25 percent slopes	167	677	844	*
199	Hallcreek loam, 0 to 10 percent slopes	2,163	1,109	3,272	0.2
200	Haploxerolls, 30 to 70 percent slopes	428	1,633	2,061	0.2
201	Hartill silt loam, dry, 20 to 40 percent slopes	1,233	0	1,233	*
202	Hartill silt loam, dry, 40 to 65 percent slopes	2,190	0	2,190	0.2
203	Hellgate gravelly coarse sandy loam, 3 to 20 percent slopes	833	0	833	*
204	Hellgate gravelly loam, cool, 3 to 15 percent slopes	449	0	449	*
205	Henneway silt loam, 0 to 20 percent slopes	1,288	0	1,288	*
206	Henneway silt loam, 20 to 40 percent slopes	1,957	0	1,957	0.1
207	Henneway silt loam, warm, 20 to 40 percent slopes	1,579	0	1,579	0.1
208	Heytou-Stubblefield stony loams complex, 25 to 65 percent slopes	0	4,029	4,029	0.3
209	Histosols, ponded	428	662	1,090	*
210	Hobohill sandy loam, 40 to 70 percent slopes	71	778	849	*
211	Hobohill stony sandy loam, 3 to 25 percent slopes	59	1,353	1,412	0.1
212	Hodgson silt loam, 0 to 5 percent slopes	1,589	0	1,589	0.1
213	Hodgson silt loam, 5 to 15 percent slopes	1,471	0	1,471	0.1
214	Hodgson silt loam, 15 to 30 percent slopes	826	0	826	*
215	Hodgson silt loam, 30 to 50 percent slopes	742	0	742	*
216	Hudnut gravelly sandy loam, 0 to 20 percent slopes	220	2,721	2,941	0.2
217	Hudnut gravelly sandy loam, 20 to 40 percent slopes	60	844	904	*
218	Hunters silt loam, 0 to 5 percent slopes	1,658	0	1,658	0.1
219	Hunters silt loam, warm, 30 to 65 percent slopes	904	0	904	*
220	Inchelium silt loam, 0 to 5 percent slopes	711	0	711	*
221	Inchelium silt loam, 5 to 10 percent slopes	211	0	211	*
222	Inkler gravelly silt loam, dry, 5 to 20 percent slopes	4,104	616	4,720	0.3
223	Inkler gravelly silt loam, dry, 20 to 40 percent slopes	9,780	1,885	11,665	0.9
224	Inkler gravelly silt loam, dry, 40 to 65 percent slopes	6,124	781	6,905	0.5
225	Inkler, dry-Baldknob-Rock outcrop complex, 5 to 30 percent slopes	4,885	162	5,047	0.4
226	Inkler, dry-Baldknob-Rock outcrop complex, 30 to 65 percent slopes	3,724	458	4,182	0.3
227	Inkler, dry-Rock outcrop complex, 20 to 40 percent slopes	4,905	1,813	6,718	0.5
228	Inkler, dry-Rock outcrop complex, 40 to 65 percent slopes	3,575	408	3,983	0.3
229	Jimcreek silt loam, 0 to 5 percent slopes	935	439	1,374	0.1
230	Johntom-Rock outcrop-Rubble land complex, 30 to 65 percent slopes	3,471	0	3,471	0.3
231	Karamin fine sandy loam, 0 to 20 percent slopes	132	972	1,104	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
232	Karamin fine sandy loam, 20 to 40 percent slopes	117	414	531	*
233	Karamin fine sandy loam, 40 to 65 percent slopes	122	157	279	*
234	Kartar sandy loam, warm, 0 to 10 percent slopes	70	1,516	1,586	0.1
235	Kellerbutte silt loam, 20 to 40 percent slopes	1,296	0	1,296	*
236	Kellerbutte silt loam, 40 to 65 percent slopes	1,986	17	2,003	0.1
237	Kenotrail silt loam, 20 to 40 percent slopes	482	0	482	*
238	Kewach silt loam, 0 to 5 percent slopes	3,641	145	3,786	0.3
239	Kewach silt loam, 5 to 15 percent slopes	507	0	507	*
240	Kewach silt loam, 15 to 30 percent slopes	354	0	354	*
241	Kewach silt loam, 30 to 50 percent slopes	402	131	533	*
242	Kiehl silt loam, 0 to 8 percent slopes	4,888	0	4,888	0.4
243	Kiehl silt loam, 20 to 40 percent slopes	2,916	0	2,916	0.2
244	Kiehl silt loam, 40 to 65 percent slopes	1,182	0	1,182	*
245	Kiehl silt loam, cool, 0 to 8 percent slopes	1,219	0	1,219	*
246	Kiehl silt loam, cool, 20 to 40 percent slopes	653	0	653	*
247	Kiehl silt loam, cool, 40 to 65 percent slopes	429	0	429	*
248	Koepke loam, 15 to 30 percent slopes	356	2,010	2,366	0.2
249	Lakesol silt loam, 30 to 65 percent north slopes	1,009	0	1,009	*
250	Lithic Xerorthents-Baldknob-Rock outcrop complex, 8 to 40 percent slopes	6,193	44	6,237	0.5
251	Lithic Xerorthents-Baldknob-Rock outcrop complex, 40 to 70 percent slopes	7,205	185	7,390	0.5
252	Logy very stony sandy loam, 3 to 25 percent slopes	262	953	1,215	*
253	Loony loam, 0 to 15 percent slopes	11	1,773	1,784	0.1
254	Lostcreek loam, 3 to 15 percent slopes	443	2,139	2,582	0.2
255	Louiecreek gravelly loam, 3 to 20 percent slopes	539	0	539	*
256	Louploup silt loam, 0 to 20 percent slopes	643	7,112	7,755	0.6
257	Louploup silt loam, 20 to 40 percent slopes	137	3,074	3,211	0.2
258	Lynxcreek silt loam, 20 to 40 percent slopes	673	0	673	*
259	Malott very fine sandy loam, 0 to 5 percent slopes	236	1,157	1,393	0.1
260	Malott very fine sandy loam, 5 to 10 percent slopes	112	1,401	1,513	0.1
261	Malott very fine sandy loam, 10 to 25 percent slopes	14	1,210	1,224	*
262	Malott stony very fine sandy loam, 3 to 25 percent slopes	0	10,823	10,823	0.8
263	Malott stony very fine sandy loam, 25 to 65 percent slopes	0	9,032	9,032	0.7
264	Malott-Rock outcrop complex, 3 to 25 percent slopes	0	1,829	1,829	0.1
265	Malott-Rock outcrop complex, 25 to 65 percent slopes	0	3,253	3,253	0.2
266	Malott-Torriorthents complex, 25 to 70 percent slopes	0	1,291	1,291	*
267	Manley silt loam, dry, 5 to 20 percent slopes	1,254	4,010	5,264	0.4
268	Manley silt loam, dry, 20 to 40 percent slopes	2,811	14,760	17,571	1.3
269	Manley silt loam, dry, 40 to 65 percent slopes	3,909	3,193	7,102	0.5

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
270	Manley, dry-Codylake complex, 20 to 40 percent slopes	11	711	722	*
271	Manley, dry-Rock outcrop complex, 20 to 40 percent slopes	272	1,352	1,624	0.1
272	Manley, dry-Rock outcrop complex, 40 to 65 percent slopes	1,207	313	1,520	0.1
273	Martella silt loam, 0 to 8 percent slopes	808	21	829	*
274	Martella silt loam, dry, 0 to 8 percent slopes	382	959	1,341	*
275	Martella silt loam, dry, 8 to 30 percent slopes	306	47	353	*
276	Medisaprists, 0 to 2 percent slopes	5	508	513	*
277	Merkel sandy loam, 5 to 20 percent slopes	387	1,516	1,903	0.1
278	Merkel sandy loam, 20 to 40 percent slopes	4,915	5,322	10,237	0.8
279	Merkel sandy loam, 40 to 65 percent slopes	3,425	790	4,215	0.3
280	Merkel bouldery fine sandy loam, 5 to 20 percent slopes	137	2,032	2,169	0.2
281	Merkel bouldery fine sandy loam, 20 to 40 percent slopes	369	1,194	1,563	0.1
282	Mineral stony loam, 20 to 40 percent slopes	2,509	0	2,509	0.2
283	Mineral stony loam, 40 to 65 percent slopes	2,352	0	2,352	0.2
284	Mineral-Rock outcrop complex, 5 to 20 percent slopes	918	1,507	2,425	0.2
285	Mineral-Rock outcrop complex, 20 to 40 percent slopes	7,977	13,035	21,012	1.5
286	Mineral-Rock outcrop complex, 40 to 65 percent slopes	5,373	4,276	9,649	0.7
287	Mineral-Rock outcrop complex, 40 to 65 percent north slopes	293	503	796	*
288	Mitchellpoint silt loam, 0 to 5 percent slopes	457	0	457	*
289	Monse silt loam, 0 to 8 percent slopes	0	604	604	*
290	Morical silt loam, 8 to 30 percent slopes	121	1,384	1,505	0.1
291	Morical silt loam, 30 to 45 percent slopes	101	301	402	*
292	Morical silt loam, 8 to 30 percent north slopes	14	1,326	1,340	*
293	Moscow silt loam, dry, 20 to 40 percent slopes	2,108	0	2,108	0.2
294	Moscow silt loam, dry, 40 to 65 percent slopes	1,767	0	1,767	0.1
295	Moses silt loam, 0 to 30 percent slopes	5,732	110	5,842	0.4
296	Moses silt loam, 30 to 65 percent slopes	5,135	1,375	6,510	0.5
297	Moses extremely bouldery silt loam, 30 to 65 percent slopes	15	1,623	1,638	0.1
298	Moses extremely bouldery silt loam, cold, 5 to 70 percent slopes	0	899	899	*
299	Narcisse silt loam, 0 to 3 percent slopes	523	456	979	*
300	Narcisse silt loam, dry, 0 to 3 percent slopes	0	490	490	*
301	Nespelem silt loam, 0 to 5 percent slopes	0	2,703	2,703	0.2
302	Nespelem silt loams complex, 5 to 30 percent slopes	83	2,279	2,362	0.2
303	Nespelem-Emdent silt loams complex, 0 to 15 percent slopes	4	297	301	*
304	Nespelem-Typic Xerorthents, eroded complex, 5 to 20 percent slopes	218	646	864	*
305	Neuske silt loam, 0 to 20 percent slopes	514	1,961	2,475	0.2
306	Neuske silt loam, 20 to 40 percent slopes	328	0	328	*
307	Nevine silt loams association, 5 to 20 percent slopes	9,630	9,820	19,450	1.4

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
308	Nevine silt loams association, 20 to 40 percent slopes	18,368	16,090	34,458	2.5
309	Nevine silt loams association, 40 to 65 percent slopes	3,314	3,618	6,932	0.5
310	Nevine-Rock outcrop association, 20 to 40 percent slopes	5,979	6,682	12,661	0.9
311	Nevine-Rock outcrop association, 40 to 65 percent slopes	4,160	703	4,863	0.4
312	Newbell silt loam, dry, 5 to 20 percent slopes	710	0	710	*
313	Newbell silt loam, dry, 20 to 40 percent slopes	2,999	0	2,999	0.2
314	Newbell silt loam, dry, 40 to 65 percent slopes	5,808	0	5,808	0.4
315	Northstar gravelly loam, dry, 5 to 30 percent slopes	214	0	214	*
316	Northstar gravelly loam, dry, 30 to 65 percent slopes	889	0	889	*
317	Northstar-Johntom-Rock outcrop complex, 8 to 30 percent slopes	253	3,660	3,913	0.3
318	Northstar-Johntom-Rock outcrop complex, 30 to 65 percent slopes	4,065	2,222	6,287	0.5
319	Northstar-Louiecreek-Rock outcrop complex, 20 to 40 percent slopes	465	1,061	1,526	0.1
320	Northstar-Louiecreek-Rock outcrop complex, 40 to 65 percent slopes	725	585	1,310	*
321	Northstar-Rock outcrop complex, 5 to 30 percent slopes	22	695	717	*
322	Ohscow silt loam, 20 to 40 percent slopes	5,374	0	5,374	0.4
323	Ohscow silt loam, 40 to 65 percent slopes	5,640	66	5,706	0.4
324	Ohscow silt loam, cool, 20 to 40 percent slopes	1,251	0	1,251	*
325	Ohscow silt loam, cool, 40 to 65 percent slopes	3,047	0	3,047	0.2
326	Okanogan loam, 0 to 5 percent slopes	0	824	824	*
327	Omak silt loam, 0 to 8 percent slopes	50	1,022	1,072	*
328	Owhi loam, 0 to 8 percent slopes	622	4,938	5,560	0.4
329	Owhi stony loam, 3 to 30 percent slopes	63	1,092	1,155	*
330	Owhi-Haley fine sandy loams complex, 0 to 25 percent slopes	0	1,220	1,220	*
331	Oxerine silt loam, 5 to 20 percent slopes	278	36	314	*
332	Oxerine silt loam, 20 to 40 percent slopes	4,811	676	5,487	0.4
333	Oxerine silt loam, 40 to 65 percent slopes	9,757	529	10,286	0.8
334	Oxerine-Rock outcrop complex, 5 to 30 percent slopes	2,421	207	2,628	0.2
335	Oxerine-Rock outcrop complex, 30 to 65 percent slopes	5,665	1,141	6,806	0.5
336	Parmenter silt loam, 0 to 8 percent slopes	1,363	1,061	2,424	0.2
337	Parmenter silt loam, 8 to 20 percent slopes	1,935	665	2,600	0.2
338	Parmenter silt loam, 20 to 40 percent slopes	169	200	369	*
339	Parmenter bouldery silt loam, 8 to 20 percent slopes	1,067	336	1,403	0.1
340	Peshastin stony fine sandy loam, 0 to 10 percent slopes	11	1,933	1,944	0.1
341	Peshastin stony fine sandy loam, 10 to 30 percent slopes	0	1,918	1,918	0.1
342	Peshastin extremely bouldery loam, 20 to 60 percent slopes	0	822	822	*
343	Phoebe fine sandy loam, 0 to 5 percent slopes	2,795	89	2,884	0.2
344	Phoebe fine sandy loam, 5 to 10 percent slopes	699	0	699	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
345	Phoebe fine sandy loam, 10 to 25 percent slopes	997	0	997	*
346	Phoebe fine sandy loam, 40 to 65 percent slopes	150	50	200	*
347	Phoebe fine sandy loam, dry, 0 to 5 percent slopes	215	188	403	*
348	Phoebe fine sandy loam, dry, 5 to 10 percent slopes	373	0	373	*
349	Phoebe fine sandy loam, dry, 10 to 25 percent slopes	225	160	385	*
350	Phoebe, dry-Dehart complex, 8 to 30 percent slopes	367	0	367	*
351	Picard very fine sandy loam, 0 to 8 percent slopes	655	3,679	4,334	0.3
352	Picard very fine sandy loam, 8 to 30 percent slopes	635	1,486	2,121	0.2
353	Pits, sand and gravel	24	414	438	*
354	Pogue fine sandy loam, 0 to 5 percent slopes	338	2,976	3,314	0.2
355	Pogue fine sandy loam, 5 to 10 percent slopes	19	705	724	*
356	Pogue fine sandy loam, 10 to 25 percent slopes	3	495	498	*
357	Pogue gravelly fine sandy loam, 0 to 10 percent slopes	151	1,369	1,520	0.1
358	Pogue stony fine sandy loam, 0 to 25 percent slopes	64	2,138	2,202	0.2
359	Pogue stony fine sandy loam, 25 to 65 percent slopes	88	422	510	*
360	Poween loam, 0 to 5 percent slopes	0	1,506	1,506	0.1
361	Quincy sand, 8 to 50 percent slopes, eroded	0	413	413	*
362	Quincy fine sand, 25 to 60 percent slopes	750	1,134	1,884	0.1
363	Quincy loamy sand, fan, 2 to 10 percent slopes	0	397	397	*
364	Quincy loamy fine sand, 0 to 10 percent slopes	791	6,522	7,313	0.5
365	Quincy loamy fine sand, 0 to 10 percent slopes, eroded	0	1,144	1,144	*
366	Quincy loamy fine sand, 10 to 25 percent slopes	483	2,942	3,425	0.3
367	Quincy-Aeneas complex, 3 to 15 percent slopes	474	0	474	*
368	Raisio channery loam, dry, 40 to 65 percent slopes	2,064	77	2,141	0.2
369	Raisio, dry-Rock outcrop complex, 20 to 40 percent slopes	7,335	633	7,968	0.6
370	Raisio-Rufus channery loams complex, 8 to 30 percent slopes	794	0	794	*
371	Raisio-Rufus channery loams complex, 30 to 65 percent slopes	8,975	0	8,975	0.7
372	Raisio, dry-Rufus channery loams complex, 30 to 65 percent slopes	6,583	0	6,583	0.5
373	Raisio, dry-Rufus-Rock outcrop complex, 30 to 65 percent slopes	8,934	542	9,476	0.7
374	Raisio, warm-Rufus channery loams complex, 8 to 30 percent slopes	1,284	0	1,284	*
375	Raisio, warm-Rufus channery loams complex, 30 to 65 percent slopes	1,019	0	1,019	*
376	Ralsen silt loam, 0 to 3 percent slopes	259	2,582	2,841	0.2
377	Ratlake silty clay loam, 0 to 2 percent slopes	0	239	239	*
378	Reardan silt loam, 0 to 8 percent slopes	370	0	370	*
379	Reardan silt loam, 8 to 15 percent slopes	318	0	318	*
380	Rebecca fine sandy loam, 0 to 5 percent slopes	0	384	384	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
381	Rebecca gravelly sandy loam, 3 to 15 percent slopes	178	963	1,141	*
382	Renha silt loam, 5 to 20 percent slopes	280	0	280	*
383	Renha silt loam, 20 to 40 percent slopes	193	0	193	*
384	Renha, warm-Oxerine silt loams complex, 20 to 40 percent slopes	330	0	330	*
385	Republic loam, 3 to 15 percent slopes	2,677	5,697	8,374	0.6
386	Republic loam, 15 to 30 percent slopes	2,204	2,155	4,359	0.3
387	Republic loam, 30 to 65 percent slopes	1,879	1,166	3,045	0.2
388	Resner loam, 0 to 20 percent slopes	1,630	6,963	8,593	0.6
389	Resner loam, 20 to 40 percent slopes	3,430	3,482	6,912	0.5
390	Ret silt loam, 0 to 3 percent slopes	1,731	974	2,705	0.2
391	Riverwash	136	68	204	*
392	Rock outcrop	3,346	7,540	10,886	0.8
393	Rock outcrop-Chumstick complex, 20 to 65 percent slopes	43	2,212	2,255	0.2
394	Rock outcrop-Chumstick, cold complex, 20 to 65 percent slopes	0	548	548	*
395	Rock outcrop-Mineral complex, 30 to 65 percent slopes	2,975	994	3,969	0.3
396	Rock outcrop-Rufus complex, 20 to 65 percent slopes	2,242	0	2,242	0.2
397	Rock outcrop-Soaplake complex, 5 to 30 percent slopes	0	3,602	3,602	0.3
398	Rock outcrop-Swakane complex, 5 to 30 percent slopes	1,680	5,846	7,526	0.6
399	Rock outcrop-Vanbrunt complex, 20 to 65 percent slopes	570	2,478	3,048	0.2
400	Roosevelt-Soaplake-Rock outcrop complex, 5 to 30 percent slopes	607	1,066	1,673	0.1
401	Roosevelt-Soaplake-Rock outcrop complex, 30 to 65 percent slopes	115	413	528	*
402	Rubble land	1,745	1,070	2,815	0.2
403	Rubble land-Rock outcrop complex	1,222	2,050	3,272	0.2
404	Rubble land-Rock outcrop-Haploxerolls, cobbly complex, 30 to 70 percent slopes	261	1,505	1,766	0.1
405	Sacheen loamy sand, dry, 20 to 40 percent slopes	153	685	838	*
406	Sacheen loamy sand, dry, 40 to 70 percent slopes	301	767	1,068	*
407	Sacheen loamy fine sand, dry, 0 to 20 percent slopes	54	878	932	*
408	Sanpoil silt loam, 0 to 2 percent slopes	817	879	1,696	0.1
409	Sanpoil silt loam, ponded, 0 to 2 percent slopes	117	258	375	*
410	Scala very fine sandy loam, 0 to 5 percent slopes	1,127	126	1,253	*
411	Sclome silty clay loam, 0 to 3 percent slopes	767	0	767	*
412	Scoap silt loam, 5 to 20 percent slopes	836	319	1,155	*
413	Scoap gravelly loam, 20 to 40 percent slopes	3,168	3,054	6,222	0.5
414	Scoap gravelly loam, 40 to 65 percent slopes	1,880	1,088	2,968	0.2
415	Scoap-Rock outcrop complex, 20 to 40 percent slopes	493	1,748	2,241	0.2
416	Scoap-Rock outcrop complex, 40 to 65 percent slopes	573	159	732	*
417	Scrabblers silt loam, dry, 0 to 20 percent slopes	567	0	567	*
418	Scrabblers silt loam, dry, 20 to 40 percent slopes	359	0	359	*
419	Scrabblers loam, warm, 0 to 20 percent slopes	774	440	1,214	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
420	Scrabblers loam, warm, 20 to 40 percent slopes	581	431	1,012	*
421	Sitdown gravelly loam, 40 to 70 percent slopes	1,540	276	1,816	0.1
422	Skaha loamy sand, 0 to 10 percent slopes	141	1,000	1,141	*
423	Skaha gravelly loamy sand, 0 to 10 percent slopes	30	1,347	1,377	0.1
424	Skaha extremely gravelly loamy sand, 30 to 65 percent slopes	283	4,535	4,818	0.4
425	Skaha very stony sandy loam, 5 to 30 percent slopes	19	1,152	1,171	*
426	Skaha very stony sandy loam, 30 to 65 percent slopes	0	1,478	1,478	0.1
427	Skaha-Rock outcrop complex, 30 to 65 percent slopes	83	752	835	*
428	Skanid gravelly sandy loam, 5 to 20 percent slopes	766	0	766	*
429	Skanid gravelly sandy loam, 20 to 40 percent slopes	3,053	34	3,087	0.2
430	Skanid gravelly sandy loam, 40 to 65 percent slopes	1,880	0	1,880	0.1
431	Skanid gravelly sandy loam, warm, 5 to 20 percent slopes	1,338	397	1,735	0.1
432	Skanid gravelly sandy loam, warm, 20 to 40 percent slopes	4,576	1,126	5,702	0.4
433	Skanid gravelly sandy loam, warm, 40 to 65 percent slopes	2,670	347	3,017	0.2
434	Skanid-Rock outcrop complex, 20 to 40 percent slopes	905	0	905	*
435	Skanid-Rock outcrop complex, 40 to 65 percent slopes	2,070	7	2,077	0.2
436	Skanid, warm-Rock outcrop complex, 40 to 65 percent slopes	1,715	433	2,148	0.2
437	Spens very stony loamy sand, dry, 20 to 40 percent slopes	110	1,197	1,307	*
438	Spens very stony loamy sand, dry, 40 to 65 percent slopes	649	422	1,071	*
439	Spokane loam, 5 to 20 percent slopes	3,330	1,252	4,582	0.3
440	Spokane loam, 20 to 40 percent slopes	8,947	1,241	10,188	0.7
441	Spokane loam, 40 to 65 percent slopes	2,574	344	2,918	0.2
442	Spokane loam, warm, 20 to 40 percent slopes	263	729	992	*
443	Spokane loam, warm, 40 to 65 percent slopes	90	569	659	*
444	Spokane-Rock outcrop complex, 5 to 20 percent slopes	325	0	325	*
445	Spokane-Rock outcrop complex, 20 to 40 percent slopes	909	121	1,030	*
446	Spokane, warm-Skanid, warm complex, 5 to 20 percent slopes	1,949	22	1,971	0.1
447	Spokane, warm-Skanid, warm complex, 20 to 40 percent slopes	1,552	419	1,971	0.1
448	Spokane, warm-Skanid, warm complex, 40 to 65 percent slopes	1,838	0	1,838	0.1
449	Springdale gravelly sandy loam, 0 to 15 percent slopes	1,083	695	1,778	0.1
450	Springdale gravelly sandy loam, 15 to 30 percent slopes	584	12	596	*
451	Springdale gravelly sandy loam, 30 to 65 percent slopes	865	606	1,471	0.1
452	Stapaloop fine sandy loam, 0 to 20 percent slopes	808	5,127	5,935	0.4
453	Stapaloop fine sandy loam, 20 to 40 percent slopes	388	1,022	1,410	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
454	Stapaloop fine sandy loam, dry, 0 to 20 percent slopes	74	414	488	*
455	Stepstone loam, 5 to 20 percent slopes	493	3,837	4,330	0.3
456	Stepstone loam, 20 to 40 percent slopes	606	6,459	7,065	0.5
457	Stepstone loam, 40 to 65 percent slopes	222	465	687	*
458	Stepstone bouldery loam, 20 to 40 percent slopes	0	997	997	*
459	Stevens silt loam, 0 to 8 percent slopes	1,012	216	1,228	*
460	Stevens silt loam, 8 to 15 percent slopes	2,813	363	3,176	0.2
461	Stevens silt loam, 15 to 30 percent slopes	1,462	467	1,929	0.1
462	Stevens gravelly silt loam, 30 to 65 percent slopes	335	0	335	*
463	Strat gravelly fine sandy loam, 0 to 10 percent slopes	619	183	802	*
464	Stubblefield stony loam, 3 to 25 percent slopes	0	5,025	5,025	0.4
465	Swakane cobbly loam, 25 to 65 percent slopes	1,400	498	1,898	0.1
466	Swakane-Rock outcrop complex, 5 to 30 percent slopes	1,363	5,827	7,190	0.5
467	Swakane-Rock outcrop complex, 30 to 70 percent slopes	5,474	17,967	23,441	1.7
468	Swipkin silt loam, 0 to 5 percent slopes	399	280	679	*
469	Swipkin silt loam, 5 to 10 percent slopes	13	1,394	1,407	0.1
470	Thout gravelly loam, dry, 20 to 40 percent slopes	850	0	850	*
471	Thout, dry-Rock outcrop complex, 8 to 20 percent slopes	569	359	928	*
472	Thout, dry-Rock outcrop complex, 20 to 40 percent slopes	2,920	506	3,426	0.3
473	Thout, dry-Rock outcrop complex, 40 to 65 percent slopes	1,744	346	2,090	0.2
474	Timentwa loam, 0 to 8 percent slopes	0	20,250	20,250	1.5
475	Timentwa loam, 8 to 15 percent slopes	0	4,459	4,459	0.3
476	Timentwa very bouldery loam, 0 to 30 percent slopes	0	15,302	15,302	1.1
477	Timentwa loams complex, 30 to 65 percent slopes	0	536	536	*
478	Timentwa very bouldery loams complex, 30 to 65 percent slopes	0	2,008	2,008	0.1
479	Timentwa-Bakeoven-Rock outcrop complex, 0 to 30 percent slopes	0	6,656	6,656	0.5
480	Togo silt loam, 5 to 20 percent slopes	1,093	0	1,093	*
481	Togo silt loam, 20 to 40 percent slopes	3,895	0	3,895	0.3
482	Togo silt loam, 40 to 65 percent slopes	1,537	0	1,537	0.1
483	Togo silt loam, warm, 20 to 40 percent slopes	345	0	345	*
484	Togo-Rock outcrop complex, 5 to 30 percent slopes	371	0	371	*
485	Torboy fine sandy loam, 0 to 20 percent slopes	330	3,207	3,537	0.3
486	Torboy fine sandy loam, 20 to 40 percent slopes	211	1,645	1,856	0.1
487	Torrifluventic Haploxerolls, 0 to 3 percent slopes	0	341	341	*
488	Tunkcreek fine sandy loam, 5 to 20 percent slopes	0	311	311	*
489	Tunkcreek fine sandy loam, 20 to 40 percent slopes	6	734	740	*
490	Tyee gravelly loam, 5 to 30 percent slopes	702	2,904	3,606	0.3
491	Tyee gravelly loam, 30 to 65 percent slopes	1,275	2,485	3,760	0.3
492	Tyee gravelly loam, 30 to 65 percent north slopes	252	964	1,216	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total	
				Area	Extent
		Acres	*Acres*	*Acres*	*Pct*
493	Tyee-Morical-Tyee complex, 30 to 60 percent slopes	5	896	901	*
494	Tyee-Rock outcrop complex, 8 to 30 percent slopes	245	271	516	*
495	Tyee-Rock outcrop complex, 30 to 65 percent slopes	863	1,533	2,396	0.2
496	Typic Haplaquolls, 0 to 2 percent slopes	0	306	306	*
497	Typic Xerorthents-Typic Xerochrepts complex, 5 to 50 percent slopes	388	0	388	*
498	Ultic Haploxerolls, 40 to 70 percent slopes	258	360	618	*
499	Uncas muck, 0 to 2 percent slopes	232	0	232	*
500	Vanbrunt-Rock outcrop complex, 5 to 20 percent slopes	200	683	883	*
501	Vanbrunt-Rock outcrop complex, 20 to 40 percent slopes	3,091	6,154	9,245	0.7
502	Vanbrunt-Rock outcrop complex, 40 to 65 percent slopes	3,107	2,162	5,269	0.4
503	Wannacott silt loam, 0 to 8 percent slopes	0	726	726	*
504	Wannacott silt loam, 8 to 15 percent slopes	0	409	409	*
505	Wapal gravelly sandy loam, 0 to 15 percent slopes	1,249	1,163	2,412	0.2
506	Wapal cobbly sandy loam, 0 to 15 percent slopes	231	257	488	*
507	Wapal gravelly sandy loam, 15 to 30 percent slopes	700	152	852	*
508	Wapal gravelly sandy loam, 30 to 65 percent slopes	3,468	635	4,103	0.3
509	Wellscreek channery loam, 5 to 20 percent slopes	604	0	604	*
510	Wellscreek channery loam, 20 to 40 percent slopes	2,167	0	2,167	0.2
511	Wellscreek very channery loam, 40 to 65 percent slopes	4,412	0	4,412	0.3
512	Whitestone loam, 5 to 20 percent slopes	445	889	1,334	*
513	Whitestone gravelly sandy loam, 20 to 40 percent slopes	956	2,335	3,291	0.2
514	Whitestone gravelly sandy loam, 40 to 65 percent slopes	1,078	431	1,509	0.1
515	Whitestone very stony sandy loam, 20 to 40 percent slopes	80	707	787	*
516	Whitestone-Rock outcrop complex, 20 to 40 percent slopes	275	823	1,098	*
517	Wilmont silt loam, 20 to 40 percent slopes	1,292	0	1,292	*
518	Wilmont silt loam, 40 to 65 percent slopes	3,439	0	3,439	0.3
519	Wilmont silt loam, cool, 20 to 40 percent slopes	1,242	0	1,242	*
520	Wilmont silt loam, cool, 40 to 65 percent slopes	1,049	0	1,049	*
521	Winchester loamy coarse sand, 0 to 10 percent slopes	1,186	40	1,226	*
522	Winchester loamy coarse sand, 10 to 25 percent slopes	196	202	398	*
523	Winchester loamy coarse sand, 25 to 60 percent slopes	505	0	505	*
524	Winchester-Rock outcrop complex, 0 to 25 percent slopes	295	109	404	*
525	Winthrop stony sandy loam, 0 to 20 percent slopes	27	313	340	*
526	Wynhoff stony loam, 8 to 30 percent slopes	320	46	366	*
527	Wynhoff stony loam, 30 to 65 percent slopes	391	101	492	*

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Ferry County	Okanogan County	Total Area	Total Extent
		Acres	*Acres*	*Acres*	*Pct*
528	Xeric Torriorthents, fill, 0 to 15 percent slopes	0	1,038	1,038	*
529	Xeric Torriorthents, escarpments, 30 to 65 percent slopes	505	3,764	4,269	0.3
530	Xerochrepts-Rubble land-Rock outcrop complex, 40 to 90 percent slopes	5,193	1,426	6,619	0.5
531	Water	610	1,275	1,885	0.1
532	Dam	0	5	5	*
	Total	681,200	680,032	1,361,232	100.0

* Less than 0.1 percent.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture

(Yields in the "N" columns are for nonirrigated areas; those in the "I" columns are for irrigated areas. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
1:												
Achimin	2e	2e	---	5.00	40.00	---	2.00	6.00	40.00	---	50.00	80.00
2:												
Achimin	4e	6e	---	4.00	35.00	---	---	5.00	35.00	---	45.00	---
Calcic Pachic Haploxerolls	3e	---	---	---	45.00	---	3.00	---	45.00	---	50.00	---
3:												
Aeneas	4s	3e	---	7.00	---	---	---	6.50	26.00	---	18.00	110.00
4:												
Aeneas	4e	3e	---	7.00	---	---	---	6.50	26.00	---	18.00	110.00
5:												
Ahtanum	6w	---	---	---	---	---	---	---	---	---	---	---
6:												
Aits	3e	4e	1.50	5.50	50.00	---	2.00	5.00	45.00	---	55.00	---
7:												
Aits	6e	---	1.40	---	---	---	1.80	---	---	---	---	---
8:												
Aits	3e	3e	1.80	5.50	55.00	---	2.00	5.00	50.00	---	60.00	80.00
9:												
Anders	3e	3e	1.00	6.00	25.00	104.00	1.00	6.00	20.00	80.00	15.00	100.00
10:												
Andic Cryaquepts	6w	---	---	---	---	---	---	---	---	---	---	---
11:												
Annum	4e	6e	1.00	5.50	35.00	---	0.80	6.00	30.00	---	35.00	---
12:												
Annum	4e	6e	1.00	5.50	35.00	---	0.80	6.00	30.00	---	35.00	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
13:												
Annum	4e	6e	1.00	5.50	35.00	---	0.80	6.00	30.00	---	35.00	---
Annum	4e	6e	1.00	5.50	35.00	---	0.80	6.00	30.00	---	35.00	---
14:												
Apex	3e	4e	1.50	4.50	55.00	---	2.00	5.00	50.00	---	60.00	---
15:												
Apex	6e	---	1.40	---	---	---	1.80	---	---	---	---	---
16:												
Apex	7e	---	---	---	---	---	---	---	---	---	---	---
17:												
Apex	3e	4e	1.50	4.50	55.00	---	2.00	5.00	50.00	---	60.00	---
18:												
Apex	6e	---	1.40	---	---	---	1.80	---	---	---	---	---
19:												
Apex	7e	---	---	---	---	---	---	---	---	---	---	---
20:												
Aquic Xerofluvents	3w	3w	2.50	5.00	35.00	---	3.00	5.50	35.00	---	40.00	---
21:												
Aquic Xerofluvents	4w	3w	2.50	2.50	35.00	---	3.00	5.50	35.00	---	40.00	---
22:												
Aquic Xerofluvents	4w	3w	2.00	5.00	30.00	---	2.50	5.50	30.00	---	35.00	---
23:												
Badge	7s	---	---	---	---	---	---	---	---	---	---	---
24:												
Badge	7s	---	---	---	---	---	---	---	---	---	---	---
Rubble land	8s	---	---	---	---	---	---	---	---	---	---	---
25:												
Badland	8e	---	---	---	---	---	---	---	---	---	---	---
26:												
Bakeoven	7s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
27:												
Bakeoven	7s	---	---	---	---	---	---	---	---	---	---	---
Olical	4e	---	---	---	---	---	---	---	---	---	---	---
28:												
Bakeoven	7s	---	---	---	---	---	---	---	---	---	---	---
Timentwa	4e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
29:												
Baldknob	7s	---	---	---	---	---	---	---	---	---	---	---
Thout	4e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
30:												
Baldknob	7s	---	---	---	---	---	---	---	---	---	---	---
Thout	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
31:												
Barnellcreek	3e	4e	3.00	4.50	40.00	---	3.50	5.00	40.00	---	45.00	65.00
32:												
Bearspring	6e	---	---	---	---	---	---	---	---	---	---	---
33:												
Bearspring	7e	---	---	---	---	---	---	---	---	---	---	---
34:												
Bernhill	2c	2e	3.00	6.00	45.00	---	3.00	6.00	45.00	---	50.00	70.00
35:												
Bernhill	3e	4e	3.00	6.00	45.00	---	3.00	6.00	45.00	---	50.00	70.00
36:												
Beverly	7e	4e	---	5.00	---	---	---	6.00	---	---	---	75.00
37:												
Bisbee	4e	4e	---	5.00	15.00	---	1.50	5.00	15.00	---	20.00	60.00

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
38:												
Bisbee	6e	---	---	---	---	---	---	---	---	---	---	---
39:												
Boesel	3w	3w	1.50	7.00	35.00	---	1.50	7.00	30.00	---	40.00	70.00
40:												
Bong	3e	4e	1.00	4.00	35.00	---	1.30	5.00	30.00	55.00	35.00	60.00
41:												
Bong	7e	---	---	---	---	---	---	---	---	---	---	---
42:												
Bong	3e	3e	1.00	4.00	35.00	---	1.30	5.00	30.00	60.00	35.00	65.00
43:												
Borgeau	4e	6e	2.00	5.00	35.00	---	2.80	5.00	35.00	---	45.00	---
44:												
Borgeau	7e	---	---	---	---	---	---	---	---	---	---	---
45:												
Borgeau	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
46:												
Borosaprists	7w	---	---	---	---	---	---	---	---	---	---	---
47:												
Bossburg	5w	---	---	---	---	---	2.50	---	---	---	---	---
48:												
Broadax	2e	2e	1.30	6.00	45.00	---	1.80	6.00	40.00	---	25.00	110.00
49:												
Broadax	3e	4e	1.30	6.00	45.00	---	1.80	6.00	40.00	---	25.00	110.00
50:												
Brusher	6e	---	---	---	---	---	---	---	---	---	---	---
51:												
Brusher	4e	6e	1.80	5.00	35.00	---	2.00	4.50	40.00	---	45.00	---
52:												
Brusher	3e	4e	2.00	5.50	40.00	---	2.50	5.00	45.00	---	50.00	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
53:												
Brusher	6e	---	---	---	---	---	---	---	---	---	---	---
54:												
Buhrig	7s	---	---	---	---	---	---	---	---	---	---	---
55:												
Buhrig	7s	---	---	---	---	---	---	---	---	---	---	---
56:												
Buhrig	7e	---	---	---	---	---	---	---	---	---	---	---
57:												
Buhrig	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
58:												
Buhrig	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
59:												
Canteen	6e	---	---	---	---	---	---	---	---	---	---	---
60:												
Canteen	7e	---	---	---	---	---	---	---	---	---	---	---
61:												
Canteen	6e	---	---	---	---	---	---	---	---	---	---	---
62:												
Canteen	7e	---	---	---	---	---	---	---	---	---	---	---
63:												
Capoose	6e	---	---	---	---	---	---	---	---	---	---	---
64:												
Capoose	7e	---	---	---	---	---	---	---	---	---	---	---
65:												
Capoose	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
66:												
Capoose	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
67:												
Cashmere	3s	2e	---	6.00	---	---	---	7.00	---	---	25.00	80.00
68:												
Cashmere	3e	3e	---	6.00	---	---	---	7.00	---	---	25.00	80.00
69:												
Cashmere	4e	6e	---	5.00	---	---	---	6.00	---	---	20.00	---
70:												
Cashmere	6e	7e	---	---	---	---	---	---	---	---	---	---
71:												
Cashmont	4e	4e	1.50	8.00	---	---	---	7.00	---	---	18.00	130.00
72:												
Cashmont	4e	6e	1.50	8.00	---	---	---	7.00	---	---	18.00	130.00
73:												
Cedonia	2c	2e	3.00	6.00	60.00	---	3.00	6.00	30.00	---	45.00	70.00
74:												
Cedonia	3e	4e	3.00	6.00	55.00	---	3.00	6.00	25.00	---	45.00	70.00
75:												
Cedonia	4e	6e	2.50	6.00	45.00	---	2.50	6.00	25.00	---	40.00	---
76:												
Cedonia	7e	---	---	---	---	---	---	---	---	---	---	---
77:												
Centralpeak	3e	4e	1.00	2.50	40.00	---	0.80	2.50	40.00	---	40.00	---
Centralpeak	3e	4e	1.00	2.50	40.00	---	0.80	2.50	40.00	---	40.00	---
78:												
Centralpeak	6e	---	---	---	---	---	---	---	---	---	---	---
Centralpeak	6e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
79:												
Centralpeak--------	7e	---	---	---	---	---	---	---	---	---	---	---
Centralpeak--------	7e	---	---	---	---	---	---	---	---	---	---	---
80:												
Centralpeak--------	3e	4e	1.00	2.50	40.00	---	0.80	2.50	40.00	---	40.00	---
81:												
Centralpeak--------	6e	---	---	---	---	---	---	---	---	---	---	---
82:												
Centralpeak--------	7e	---	---	---	---	---	---	---	---	---	---	---
83:												
Centralpeak--------	4e	6e	1.00	2.00	35.00	---	0.80	2.50	35.00	---	35.00	---
Brusher----------	4e	6e	1.80	5.00	35.00	---	2.00	4.50	40.00	---	45.00	---
84:												
Centralpeak--------	7e	---	---	---	---	---	---	---	---	---	---	---
Centralpeak--------	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
85:												
Chumstick----------	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
86:												
Chumstick----------	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
87:												
Codylake-----------	6e	---	---	---	---	---	---	---	---	---	---	---
88:												
Codylake-----------	6e	---	---	---	---	---	---	---	---	---	---	---
89:												
Codylake-----------	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	Tons	Bu	Bu	Tons	Tons	Bu	Bu	Bu	Bu
90:												
Colockum	3e	4e	---	5.00	40.00	---	---	6.00	40.00	---	50.00	70.00
91:												
Colockum	6s	---	---	---	---	---	---	---	---	---	---	---
92:												
Colockum	7e	---	---	---	---	---	---	---	---	---	---	---
93:												
Conconully	3e	4e	---	6.00	40.00	---	1.50	6.00	35.00	---	23.00	70.00
94:												
Conconully	4e	---	---	6.00	---	---	---	---	35.00	---	23.00	---
95:												
Conconully	6e	---	---	---	---	---	---	---	---	---	---	---
96:												
Conconully	7e	---	---	---	---	---	---	---	---	---	---	---
97:												
Conconully	7e	---	---	---	---	---	---	---	---	---	---	---
98:												
Conconully	6s	---	---	---	---	---	---	---	---	---	---	---
99:												
Conconully	6e	---	---	---	---	---	---	---	---	---	---	---
Bakeoven	7s	---	---	---	---	---	---	---	---	---	---	---
100:												
Conconully	6s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
101:												
Conconully	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
102:												
Conconully	6s	---	---	---	---	---	---	---	---	---	---	---
Swakane	7s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
102:												
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
103:												
Couleedam----------	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
104:												
Coxlake------------	3w	3w	---	---	45.00	---	3.50	6.50	45.00	---	50.00	60.00
105:												
Cryofluvents-------	6w	---	---	---	---	---	---	---	---	---	---	---
106:												
Cubcreek-----------	3w	3w	3.00	5.00	45.00	---	3.50	6.00	45.00	---	50.00	60.00
107:												
Cumulic Haploxerolls------	3e	3e	1.50	4.50	35.00	---	2.00	5.00	35.00	---	40.00	60.00
108:												
Dart----------	4e	4e	1.00	3.50	---	---	1.00	4.00	---	---	20.00	55.00
109:												
Dart----------	7e	---	---	---	---	---	---	---	---	---	---	---
110:												
Dart----------	4e	6e	1.00	---	---	---	1.00	4.00	---	---	20.00	---
Springdale---------	4e	6e	---	6.00	---	---	1.50	3.50	---	---	15.00	---
111:												
Dart----------	7e	---	---	---	---	---	---	---	---	---	---	---
Springdale---------	7e	---	---	---	---	---	---	---	---	---	---	---
112:												
Dehart-------------	4e	6e	1.00	5.00	25.00	---	1.00	4.50	20.00	---	25.00	---
113:												
Dehart-------------	7e	---	---	---	---	---	---	---	---	---	---	---
114:												
Dehart-------------	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
114:												
Phoebe	7e	---	---	---	---	---	---	---	---	---	---	---
115:												
Dehart	4e	6e	1.00	5.00	25.00	---	1.00	4.50	20.00	---	25.00	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
116:												
Dehart	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
117:												
Dinkelman	3e	4e	1.20	8.00	35.00	---	1.50	---	26.00	---	18.00	80.00
118:												
Dinkelman	6e	---	---	---	---	---	---	---	---	---	---	---
119:												
Dinkelman	7e	---	---	---	---	---	---	---	---	---	---	---
120:												
Disautel	2e	2e	---	5.00	29.00	---	1.50	6.00	24.00	---	17.00	70.00
121:												
Disautel	3e	4e	---	5.00	29.00	---	1.50	6.00	24.00	---	17.00	70.00
122:												
Disautel	3e	4e	---	5.00	29.00	---	1.50	6.00	24.00	---	17.00	70.00
Nespelem	3e	4e	1.50	6.00	30.00	---	1.50	6.00	25.00	---	18.00	100.00
123:												
Disautel	4e	6e	---	5.00	29.00	---	1.50	5.50	24.00	---	17.00	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
124:												
Donavan	3e	4e	1.20	4.50	30.00	---	1.20	5.00	30.00	---	35.00	60.00
125:												
Donavan	4e	6e	1.00	4.00	25.00	---	1.00	4.50	25.00	---	30.00	---
126:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
127:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---
128:												
Donavan	3e	4e	1.50	4.50	30.00	---	1.50	5.00	30.00	---	35.00	60.00
129:												
Donavan	4e	6e	1.50	4.00	25.00	---	1.50	4.50	25.00	---	30.00	---
130:												
Donavan	7e	---	---	---	---	---	---	---	---	---	---	---
131:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---
132:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---
133:												
Donavan	3e	4e	1.50	4.50	30.00	---	1.50	5.00	30.00	---	35.00	60.00
Goldlake	2e	2e	2.50	4.50	45.00	---	3.00	5.00	45.00	---	50.00	70.00
134:												
Donavan	4e	6e	1.50	4.00	25.00	---	1.50	4.50	25.00	---	30.00	---
Northstar	6e	6e	1.00	3.00	---	---	0.80	3.50	---	---	---	---
135:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
136:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
137:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
138:												
Donavan	6e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
138:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
139:												
Duleylake	2e	2e	1.00	5.00	45.00	---	1.50	6.00	45.00	---	55.00	80.00
140:												
Elbowlake	3e	4e	1.00	4.00	25.00	---	1.50	3.50	25.00	---	30.00	---
141:												
Elbowlake	6e	---	1.00	---	---	---	1.20	---	---	---	---	---
142:												
Elbowlake	7e	---	---	---	---	---	---	---	---	---	---	---
143:												
Elbowlake	3e	4e	1.00	4.00	25.00	---	1.50	3.50	25.00	---	30.00	---
144:												
Elbowlake	6e	---	---	---	---	---	---	---	---	---	---	---
145:												
Elbowlake	7e	---	---	---	---	---	---	---	---	---	---	---
146:												
Ellisforde	3c	2e	---	8.00	31.00	---	---	---	32.00	---	18.00	110.00
147:												
Ellisforde	3e	3e	---	8.00	31.00	---	---	---	27.00	---	18.00	110.00
148:												
Ellisforde	4e	6e	---	7.00	31.00	---	---	---	21.00	---	18.00	---
149:												
Elvedere	4e	6e	---	5.00	20.00	---	---	5.50	20.00	---	15.00	---
150:												
Elvedere	6e	6e	---	4.50	---	---	---	5.00	---	---	---	---
151:												
Elvedere	6e	---	---	---	---	---	---	---	---	---	---	---
152:												
Elvedere	4e	3e	---	5.50	25.00	---	---	6.00	20.00	---	15.00	60.00
Leahy	6s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
153:												
Emdent	6w	---	---	---	---	---	---	---	---	---	---	---
154:												
Emdent	6w	---	---	---	---	---	---	---	---	---	---	---
155:												
Ewall	7e	4e	---	4.00	---	---	---	4.50	---	---	---	50.00
156:												
Ewall	7e	6e	---	3.50	---	---	---	4.00	---	---	---	---
157:												
Ewall	6e	4e	---	6.00	---	---	---	6.00	---	---	---	125.00
158:												
Ewall	6e	6e	---	6.00	---	---	---	6.00	---	---	---	---
159:												
Ewall	7e	---	---	---	---	---	---	---	---	---	---	---
160:												
Farrell	3s	2e	---	6.00	---	---	---	7.00	---	---	25.00	80.00
161:												
Farrell	3e	3e	---	6.00	---	---	---	7.00	---	---	25.00	80.00
162:												
Farrell	4e	6e	---	5.00	---	---	---	6.00	---	---	20.00	---
163:												
Farrell	7s	---	---	---	---	---	---	---	---	---	---	---
164:												
Fivelakes	7s	---	---	---	---	---	---	---	---	---	---	---
165:												
Fivelakes	4w	4w	1.00	4.00	25.00	---	0.80	5.00	25.00	---	30.00	60.00
166:												
Fivelakes	6e	---	---	---	---	---	---	---	---	---	---	---
167:												
Fivelakes	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
168:												
Fivelakes	7s	---	---	---	---	---	---	---	---	---	---	---
169:												
Friedlander	3e	4e	1.50	5.00	40.00	---	2.00	4.50	40.00	---	45.00	---
170:												
Friedlander	6e	---	---	---	---	---	---	---	---	---	---	---
171:												
Friedlander	3e	4e	1.50	5.00	40.00	---	2.00	4.50	40.00	---	45.00	---
172:												
Garrison	3s	3e	---	---	20.00	---	1.00	4.00	30.00	60.00	30.00	60.00
173:												
Garrison	3e	4e	---	---	20.00	---	0.80	3.30	25.00	60.00	25.00	60.00
174:												
Garrison	4e	6e	---	---	20.00	---	0.80	3.30	25.00	---	25.00	---
175:												
Georgecreek	3e	4e	1.00	3.50	45.00	---	1.00	4.00	35.00	---	45.00	60.00
176:												
Georgecreek	6e	---	---	---	---	---	---	---	---	---	---	---
177:												
Georgecreek	3e	4e	1.00	3.50	45.00	---	1.00	4.00	35.00	---	45.00	60.00
178:												
Georgecreek	6e	---	---	---	---	---	---	---	---	---	---	---
179:												
Ginnis	7e	---	---	---	---	---	---	---	---	---	---	---
180:												
Ginnis	4e	6e	---	3.00	20.00	---	---	3.00	15.00	---	13.00	---
181:												
Ginnis	4e	6e	---	3.00	20.00	---	---	3.00	15.00	---	13.00	---
182:												
Ginnis	4e	6e	---	3.00	20.00	---	---	3.00	15.00	---	13.00	---
Ginnis	4e	6e	---	3.00	20.00	---	---	3.00	15.00	---	13.00	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
183:												
Ginnis	4e	6e	---	2.50	---	---	---	2.50	---	---	---	---
Ginnis	4e	6e	---	2.50	---	---	---	2.50	---	---	---	---
184:												
Ginnis	4e	6e	---	3.00	20.00	---	---	3.00	15.00	---	13.00	---
Conconully	6e	6e	---	6.00	---	---	---	6.00	---	---	---	---
185:												
Ginnis	7e	---	---	---	---	---	---	---	---	---	---	---
Conconully	7e	---	---	---	---	---	---	---	---	---	---	---
186:												
Ginnis	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
187:												
Glenrose	3e	4e	2.80	5.00	55.00	---	2.50	5.00	50.00	---	60.00	80.00
188:												
Glenrose	4e	6e	1.50	3.00	45.00	---	1.50	3.00	40.00	---	45.00	---
189:												
Goddard	4e	4e	1.00	8.00	---	---	1.50	6.00	---	---	---	---
190:												
Goddard	6e	---	---	---	---	---	---	---	---	---	---	---
191:												
Goddard	7e	---	---	---	---	---	---	---	---	---	---	---
192:												
Goldlake	2e	2e	2.50	4.50	45.00	---	3.00	5.00	45.00	---	50.00	70.00
193:												
Gooseflats	6w	---	---	---	---	---	---	---	---	---	---	---
Gooseflats	6w	---	---	---	---	---	---	---	---	---	---	---
194:												
Growden	6e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
195:												
Hadencreek	3e	3e	1.50	4.00	40.00	---	2.00	4.50	40.00	---	45.00	70.00
196:												
Haley	3s	3e	---	5.00	---	---	1.50	5.00	14.00	---	12.00	60.00
197:												
Haley	3e	3e	---	5.00	---	---	1.50	5.00	14.00	---	12.00	60.00
198:												
Haley	4e	6e	---	5.00	---	---	1.50	4.50	14.00	---	12.00	---
199:												
Hallcreek	4e	4e	1.00	4.50	20.00	---	1.20	4.50	20.00	---	25.00	65.00
200:												
Haploxerolls	7e	---	---	---	---	---	---	---	---	---	---	---
201:												
Hartill	6e	---	---	---	---	---	---	---	---	---	---	---
202:												
Hartill	7e	---	---	---	---	---	---	---	---	---	---	---
203:												
Hellgate	3e	4e	1.50	4.50	25.00	---	2.00	5.00	25.00	---	30.00	60.00
204:												
Hellgate	3e	6e	2.00	5.00	30.00	---	2.00	5.00	30.00	---	35.00	60.00
205:												
Henneway	3e	4e	2.00	5.50	45.00	---	2.50	5.00	45.00	---	50.00	---
206:												
Henneway	6e	---	---	---	---	---	---	---	---	---	---	---
207:												
Henneway	6e	---	---	---	---	---	---	---	---	---	---	---
208:												
Heytou	7e	---	---	---	---	---	---	---	---	---	---	---
Stubblefield	7s	---	---	---	---	---	---	---	---	---	---	---
209:												
Histosols	5w	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
210:												
Hobohill	7e	---	---	---	---	---	---	---	---	---	---	---
211:												
Hobohill	6e	---	---	---	---	---	---	---	---	---	---	---
212:												
Hodgson	2w	2e	1.50	5.00	35.00	---	1.50	5.50	25.00	---	40.00	65.00
213:												
Hodgson	3e	4e	1.50	5.00	35.00	---	1.50	5.50	25.00	---	35.00	65.00
214:												
Hodgson	4e	6e	1.50	5.00	35.00	---	1.50	5.00	25.00	---	35.00	---
215:												
Hodgson	7e	---	---	---	---	---	---	---	---	---	---	---
216:												
Hudnut	3e	4e	1.00	4.50	30.00	---	1.00	5.00	30.00	---	35.00	55.00
217:												
Hudnut	6e	---	---	---	---	---	---	---	---	---	---	---
218:												
Hunters	2c	2e	1.50	6.00	45.00	70.00	1.50	5.00	25.00	60.00	50.00	70.00
219:												
Hunters	7e	---	---	---	---	---	---	---	---	---	---	---
220:												
Inchelium	2w	2e	3.00	6.00	50.00	---	3.00	5.00	50.00	---	60.00	80.00
221:												
Inchelium	2e	3e	3.00	6.00	50.00	---	3.00	5.00	50.00	---	60.00	80.00
222:												
Inkler	3e	4e	1.50	3.50	30.00	---	2.00	4.00	30.00	---	35.00	---
223:												
Inkler	6e	---	---	---	---	---	---	---	---	---	---	---
224:												
Inkler	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
225:												
Inkler	4e	6e	1.50	3.00	30.00	---	2.00	3.50	30.00	---	35.00	---
Baldknob	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
226:												
Inkler	7e	---	---	---	---	---	---	---	---	---	---	---
Baldknob	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
227:												
Inkler	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
228:												
Inkler	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
229:												
Jimcreek	6w	6w	---	---	---	---	2.00	5.00	---	---	---	---
230:												
Johntom	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Rubble land	8s	---	---	---	---	---	---	---	---	---	---	---
231:												
Karamin	3e	4e	1.00	5.00	20.00	---	1.20	3.00	15.00	---	25.00	40.00
232:												
Karamin	6e	---	---	---	---	---	---	---	---	---	---	---
233:												
Karamin	7e	---	---	---	---	---	---	---	---	---	---	---
234:												
Kartar	3e	3e	1.50	5.00	30.00	---	1.50	5.00	25.00	---	35.00	60.00

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
235:												
Kellerbutte	6e	---	---	---	---	---	---	---	---	---	---	---
236:												
Kellerbutte	7e	---	---	---	---	---	---	---	---	---	---	---
237:												
Kenotrail	6e	---	---	---	---	---	---	---	---	---	---	---
238:												
Kewach	3w	3e	1.80	5.50	50.00	---	2.00	5.50	35.00	---	50.00	75.00
239:												
Kewach	3e	4e	1.80	5.50	50.00	---	2.00	5.50	35.00	---	50.00	75.00
240:												
Kewach	4e	6e	1.50	4.50	45.00	---	1.70	4.50	30.00	---	45.00	---
241:												
Kewach	7e	---	---	---	---	---	---	---	---	---	---	---
242:												
Kiehl	4e	4e	1.00	3.50	30.00	---	0.80	3.50	25.00	---	30.00	60.00
243:												
Kiehl	6e	---	---	---	---	---	---	---	---	---	---	---
244:												
Kiehl	7e	---	---	---	---	---	---	---	---	---	---	---
245:												
Kiehl	4e	4e	1.00	3.50	30.00	---	0.80	3.50	25.00	---	30.00	60.00
246:												
Kiehl	6e	---	---	---	---	---	---	---	---	---	---	---
247:												
Kiehl	7e	---	---	---	---	---	---	---	---	---	---	---
248:												
Koepke	4e	6e	1.50	5.00	35.00	---	1.50	5.00	35.00	---	40.00	---
249:												
Lakesol	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
250:												
Lithic Xerorthents	7s	---	---	---	---	---	---	---	---	---	---	---
Baldknob	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
251:												
Lithic Xerorthents	7s	---	---	---	---	---	---	---	---	---	---	---
Baldknob	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
252:												
Logy	6s	---	---	---	---	---	---	---	---	---	---	---
253:												
Loony	3e	3e	1.50	3.50	30.00	---	2.00	4.00	30.00	---	35.00	---
254:												
Lostcreek	3e	4e	1.80	5.00	45.00	---	2.00	5.50	45.00	---	50.00	---
255:												
Louiecreek	4e	4e	1.00	4.50	30.00	---	1.50	5.00	30.00	---	35.00	60.00
256:												
Louploup	3e	4e	1.50	4.50	40.00	---	2.00	5.00	40.00	---	50.00	65.00
257:												
Louploup	6e	---	---	---	---	---	---	---	---	---	---	---
258:												
Lynxcreek	6e	---	---	---	---	---	---	---	---	---	---	---
259:												
Malott	3s	2e	---	6.00	---	---	---	7.00	---	---	25.00	75.00
260:												
Malott	3e	3e	---	6.00	---	---	---	7.00	---	---	25.00	75.00
261:												
Malott	4e	6e	---	5.00	---	---	---	6.50	---	---	25.00	---
262:												
Malott	6s	6s	---	6.00	---	---	---	7.00	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
263:												
Malott	7e	---	---	---	---	---	---	---	---	---	---	---
264:												
Malott	6s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
265:												
Malott	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
266:												
Malott	7e	---	---	---	---	---	---	---	---	---	---	---
Torriorthents	7e	---	---	---	---	---	---	---	---	---	---	---
267:												
Manley	6s	---	---	---	---	---	---	---	---	---	---	---
268:												
Manley	6e	---	---	---	---	---	---	---	---	---	---	---
269:												
Manley	7e	---	---	---	---	---	---	---	---	---	---	---
270:												
Manley	6e	---	---	---	---	---	---	---	---	---	---	---
Codylake	6e	---	---	---	---	---	---	---	---	---	---	---
271:												
Manley	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
272:												
Manley	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
273:												
Martella	3e	3e	1.50	3.50	45.00	---	2.00	3.00	40.00	---	50.00	75.00

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
274:												
Martella	3e	3e	1.50	3.50	45.00	---	2.00	3.00	40.00	---	50.00	75.00
275:												
Martella	4e	6e	1.50	3.50	40.00	---	2.00	---	35.00	---	40.00	---
276:												
Medisaprists	6w	---	---	---	---	---	---	---	---	---	---	---
277:												
Merkel	3e	4e	1.50	4.00	30.00	---	1.50	3.50	25.00	---	35.00	---
278:												
Merkel	6e	---	---	---	---	---	---	---	---	---	---	---
279:												
Merkel	7e	---	---	---	---	---	---	---	---	---	---	---
280:												
Merkel	6s	---	---	---	---	---	---	---	---	---	---	---
281:												
Merkel	7s	---	---	---	---	---	---	---	---	---	---	---
282:												
Mineral	6e	---	---	---	---	---	---	---	---	---	---	---
283:												
Mineral	7e	---	---	---	---	---	---	---	---	---	---	---
284:												
Mineral	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
285:												
Mineral	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
286:												
Mineral	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
287:												
Mineral	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
288:												
Mitchellpoint	2c	2e	1.50	4.50	35.00	---	2.00	5.00	35.00	---	40.00	65.00
289:												
Monse	3e	2e	1.00	6.50	25.00	---	2.00	7.00	20.00	---	15.00	80.00
290:												
Morical	4e	6e	---	3.50	25.00	---	2.00	4.00	25.00	---	30.00	80.00
291:												
Morical	6e	---	---	---	---	---	---	---	---	---	---	---
292:												
Morical	4e	6e	---	3.50	25.00	---	2.00	4.00	25.00	---	30.00	80.00
293:												
Moscow	6e	---	---	---	---	---	---	---	---	---	---	---
294:												
Moscow	7e	---	---	---	---	---	---	---	---	---	---	---
295:												
Moses	6e	---	---	---	---	---	---	---	---	---	---	---
296:												
Moses	7e	---	---	---	---	---	---	---	---	---	---	---
297:												
Moses	7s	---	---	---	---	---	---	---	---	---	---	---
298:												
Moses	6s	---	---	---	---	---	---	---	---	---	---	---
299:												
Narcisse	3w	3w	3.00	6.00	60.00	---	3.50	6.50	60.00	---	70.00	80.00
300:												
Narcisse	3w	3w	2.50	5.50	50.00	---	3.00	6.00	50.00	---	60.00	70.00
301:												
Nespelem	3s	3e	1.50	6.00	30.00	---	1.50	6.00	25.00	---	18.00	100.00

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
302:												
Nespelem	4e	6e	1.50	6.00	30.00	---	1.50	5.50	25.00	---	18.00	100.00
Nespelem	4e	6e	1.50	6.00	30.00	---	1.50	5.50	25.00	---	18.00	100.00
303:												
Nespelem	3e	3e	1.50	6.00	30.00	---	1.50	6.00	25.00	---	18.00	100.00
Emdent	6w	---	---	---	---	---	---	---	---	---	---	---
304:												
Nespelem	3e	4e	1.50	6.00	30.00	---	1.50	6.00	25.00	---	18.00	100.00
Typic Xerorthents	6e	---	---	---	---	---	---	---	---	---	---	---
305:												
Neuske	3e	4e	1.20	4.00	30.00	---	1.50	4.50	30.00	---	35.00	---
306:												
Neuske	6e	---	---	---	---	---	---	---	---	---	---	---
307:												
Nevine	3e	4e	1.00	4.00	20.00	---	---	3.00	15.00	---	25.00	---
Nevine	3e	4e	1.00	4.00	20.00	---	---	3.00	15.00	---	25.00	---
308:												
Nevine	6e	---	---	---	---	---	---	---	---	---	---	---
Nevine	6e	---	---	---	---	---	---	---	---	---	---	---
309:												
Nevine	7e	---	---	---	---	---	---	---	---	---	---	---
Nevine	7e	---	---	---	---	---	---	---	---	---	---	---
310:												
Nevine	6e	---	---	---	---	---	---	---	---	---	---	---
Nevine	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
311:												
Nevine	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
311:												
Nevine	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
312:												
Newbell	3e	4e	1.10	3.00	30.00	---	1.10	3.50	25.00	---	30.00	---
313:												
Newbell	6e	---	---	---	---	---	---	---	---	---	---	---
314:												
Newbell	7e	---	---	---	---	---	---	---	---	---	---	---
315:												
Northstar	6e	---	---	---	---	---	---	---	---	---	---	---
316:												
Northstar	7e	---	---	---	---	---	---	---	---	---	---	---
317:												
Northstar	6e	---	---	---	---	---	---	---	---	---	---	---
Johntom	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
318:												
Northstar	7e	---	---	---	---	---	---	---	---	---	---	---
Johntom	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
319:												
Northstar	6e	---	---	---	---	---	---	---	---	---	---	---
Louiecreek	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
320:												
Northstar	7e	---	---	---	---	---	---	---	---	---	---	---
Louiecreek	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
320:												
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
321:												
Northstar----------	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
322:												
Ohscow-------------	6e	---	---	---	---	---	---	---	---	---	---	---
323:												
Ohscow-------------	7e	---	---	---	---	---	---	---	---	---	---	---
324:												
Ohscow-------------	6e	---	---	---	---	---	---	---	---	---	---	---
325:												
Ohscow-------------	7e	---	---	---	---	---	---	---	---	---	---	---
326:												
Okanogan-----------	3w	3e	1.50	7.00	---	---	2.00	7.00	25.00	---	17.00	75.00
327:												
Omak---------------	3e	3e	1.50	4.50	35.00	---	2.00	5.00	35.00	---	40.00	70.00
328:												
Owhi---------------	4e	3e	1.50	4.50	20.00	---	---	5.00	16.00	---	13.00	60.00
329:												
Owhi---------------	6s	---	---	---	---	---	---	---	---	---	---	---
330:												
Owhi---------------	4e	4e	1.50	4.50	20.00	---	---	5.00	16.00	---	13.00	60.00
Haley--------------	3e	4e	---	5.00	---	---	1.50	4.50	14.00	---	12.00	60.00
331:												
Oxerine------------	4s	---	1.80	---	---	---	2.00	---	---	---	---	---
332:												
Oxerine------------	6e	---	---	---	---	---	---	---	---	---	---	---
333:												
Oxerine------------	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
334:												
Oxerine	4e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
335:												
Oxerine	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
336:												
Parmenter	3e	3e	1.00	3.50	25.00	---	1.00	4.00	25.00	---	30.00	60.00
337:												
Parmenter	3e	4e	1.00	3.50	25.00	---	1.00	4.00	25.00	---	30.00	60.00
338:												
Parmenter	6e	---	---	---	---	---	---	---	---	---	---	---
339:												
Parmenter	6s	---	---	---	---	---	---	---	---	---	---	---
340:												
Peshastin	6s	6s	---	---	---	---	---	6.00	---	---	---	---
341:												
Peshastin	6s	6s	---	---	---	---	---	6.00	---	---	---	---
342:												
Peshastin	7s	---	---	---	---	---	---	---	---	---	---	---
343:												
Phoebe	2e	2e	2.50	6.00	55.00	---	3.00	6.00	50.00	---	60.00	100.00
344:												
Phoebe	2e	3e	2.50	6.00	55.00	---	3.00	6.00	50.00	---	60.00	100.00
345:												
Phoebe	4e	6e	2.00	5.50	55.00	---	2.50	6.00	50.00	---	60.00	---
346:												
Phoebe	7e	---	---	---	---	---	---	---	---	---	---	---
347:												
Phoebe	2e	2e	2.50	6.00	55.00	---	3.00	6.00	50.00	---	60.00	100.00

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
348:												
Phoebe	2e	3e	2.50	6.00	55.00	---	3.00	6.00	50.00	---	60.00	100.00
349:												
Phoebe	4e	6e	2.00	5.50	55.00	---	2.50	6.00	50.00	---	60.00	---
350:												
Phoebe	4e	6e	2.00	5.50	55.00	---	2.50	6.00	50.00	---	60.00	---
Dehart	4e	6e	1.00	5.00	25.00	---	1.00	4.50	20.00	---	25.00	---
351:												
Picard	3e	2e	---	6.00	30.00	---	---	7.00	25.00	---	40.00	75.00
352:												
Picard	4e	6e	---	5.00	25.00	---	---	6.00	20.00	---	30.00	---
353:												
Pits	8s	---	---	---	---	---	---	---	---	---	---	---
354:												
Pogue	4s	3e	---	7.00	---	---	---	7.00	---	---	18.00	125.00
355:												
Pogue	4e	3e	---	7.00	---	---	---	7.00	---	---	18.00	125.00
356:												
Pogue	4e	6e	---	7.00	---	---	---	7.00	---	---	18.00	125.00
357:												
Pogue	4e	3e	---	7.00	---	---	---	7.00	---	---	---	125.00
358:												
Pogue	6s	6s	---	7.00	---	---	---	7.00	---	---	---	---
359:												
Pogue	7s	---	---	---	---	---	---	---	---	---	---	---
360:												
Poween	3w	2e	1.50	5.00	45.00	---	2.00	6.00	30.00	---	40.00	60.00
361:												
Quincy	6e	---	---	---	---	---	---	---	---	---	---	---
362:												
Quincy	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
363:												
Quincy	6e	4e	---	6.00	---	---	---	7.00	---	---	---	90.00
364:												
Quincy	6e	4e	---	6.00	---	---	---	7.00	---	---	---	90.00
365:												
Quincy	6e	---	---	---	---	---	---	---	---	---	---	---
366:												
Quincy	6e	6e	---	5.00	---	---	---	6.00	---	---	---	90.00
367:												
Quincy	6e	4e	---	6.00	---	---	---	7.00	---	---	---	90.00
Aeneas	4e	3e	---	7.00	---	---	---	6.50	26.00	---	18.00	110.00
368:												
Raisio	7e	---	---	---	---	---	---	---	---	---	---	---
369:												
Raisio	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
370:												
Raisio	6e	---	---	---	---	---	---	---	---	---	---	---
Rufus	6e	---	---	---	---	---	---	---	---	---	---	---
371:												
Raisio	7e	---	---	---	---	---	---	---	---	---	---	---
Rufus	7e	---	---	---	---	---	---	---	---	---	---	---
372:												
Raisio	7e	---	---	---	---	---	---	---	---	---	---	---
Rufus	7e	---	---	---	---	---	---	---	---	---	---	---
373:												
Raisio	7e	---	---	---	---	---	---	---	---	---	---	---
Rufus	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	Tons	Bu	Bu	Tons	Tons	Bu	Bu	Bu	Bu
374:												
Raisio	6e	---	---	---	---	---	---	---	---	---	---	---
Rufus	6e	---	---	---	---	---	---	---	---	---	---	---
375:												
Raisio	7e	---	---	---	---	---	---	---	---	---	---	---
Rufus	7e	---	---	---	---	---	---	---	---	---	---	---
376:												
Ralsen	4w	4w	---	---	35.00	---	2.00	4.50	---	---	30.00	50.00
377:												
Ratlake	7w	---	---	---	---	---	---	---	---	---	---	---
378:												
Reardan	2e	2e	---	---	55.00	---	3.00	6.00	50.00	---	60.00	80.00
379:												
Reardan	3e	4e	---	---	55.00	---	2.00	6.00	50.00	---	60.00	80.00
380:												
Rebecca	3e	3e	1.00	5.50	35.00	---	1.20	6.00	35.00	---	40.00	70.00
381:												
Rebecca	3e	4e	1.00	5.00	30.00	---	1.00	5.50	30.00	---	35.00	60.00
382:												
Renha	3e	4e	1.00	4.50	35.00	---	1.50	4.00	35.00	---	40.00	---
383:												
Renha	6e	---	---	---	---	---	---	---	---	---	---	---
384:												
Renha	6e	---	---	---	---	---	---	---	---	---	---	---
Oxerine	6e	---	---	---	---	---	---	---	---	---	---	---
385:												
Republic	3e	4e	1.50	6.00	35.00	---	2.00	5.50	30.00	---	40.00	70.00
386:												
Republic	4e	6e	1.50	5.00	25.00	---	1.80	5.00	25.00	---	35.00	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
387:												
Republic	7e	---	---	---	---	---	---	---	---	---	---	---
388:												
Resner	6e	---	---	---	---	---	---	---	---	---	---	---
389:												
Resner	6e	---	---	---	---	---	---	---	---	---	---	---
390:												
Ret	3w	---	---	---	50.00	---	3.00	---	45.00	---	55.00	---
391:												
Riverwash	8w	---	---	---	---	---	---	---	---	---	---	---
392:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
393:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Chumstick	7s	---	---	---	---	---	---	---	---	---	---	---
394:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Chumstick	7s	---	---	---	---	---	---	---	---	---	---	---
395:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Mineral	7e	---	---	---	---	---	---	---	---	---	---	---
396:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Rufus	7e	---	---	---	---	---	---	---	---	---	---	---
397:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Soaplake	6e	---	---	---	---	---	---	---	---	---	---	---
398:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
398:												
Swakane	7s	---	---	---	---	---	---	---	---	---	---	---
399:												
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Vanbrunt	7s	---	---	---	---	---	---	---	---	---	---	---
400:												
Roosevelt	6e	---	---	---	---	---	---	---	---	---	---	---
Soaplake	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
401:												
Roosevelt	7e	---	---	---	---	---	---	---	---	---	---	---
Soaplake	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
402:												
Rubble land	8s	---	---	---	---	---	---	---	---	---	---	---
403:												
Rubble land	8s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
404:												
Rubble land	8s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
Haploxerolls	7s	---	---	---	---	---	---	---	---	---	---	---
405:												
Sacheen	6e	---	---	---	---	---	---	---	---	---	---	---
406:												
Sacheen	7e	---	---	---	---	---	---	---	---	---	---	---
407:												
Sacheen	4e	4e	1.00	2.50	25.00	---	1.50	3.00	20.00	---	20.00	35.00

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
408:												
Sanpoil	4w	---	---	---	---	---	2.50	---	---	---	---	---
409:												
Sanpoil	5w	---	---	---	---	---	2.00	---	---	---	---	---
410:												
Scala	2c	2e	2.00	6.00	45.00	---	2.50	6.00	45.00	---	50.00	75.00
411:												
Sclome	4w	---	---	---	---	---	2.00	---	---	---	---	---
412:												
Scoap	3e	4e	2.50	5.50	40.00	---	3.00	5.00	40.00	---	50.00	---
413:												
Scoap	6e	---	---	---	---	---	---	---	---	---	---	---
414:												
Scoap	7e	---	---	---	---	---	---	---	---	---	---	---
415:												
Scoap	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
416:												
Scoap	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
417:												
Scrabblers	3e	4e	1.20	4.50	25.00	---	1.50	5.00	25.00	---	30.00	60.00
418:												
Scrabblers	6e	---	---	---	---	---	---	---	---	---	---	---
419:												
Scrabblers	3e	4e	1.20	4.50	25.00	---	1.50	5.00	25.00	---	30.00	60.00
420:												
Scrabblers	6e	---	---	---	---	---	---	---	---	---	---	---
421:												
Sitdown	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
422:												
Skaha	7e	4e	---	5.00	---	---	---	6.00	---	---	---	80.00
423:												
Skaha	7e	4e	---	6.00	---	---	---	6.00	---	---	---	75.00
424:												
Skaha	7e	---	---	---	---	---	---	---	---	---	---	---
425:												
Skaha	7s	---	---	---	---	---	---	---	---	---	---	---
426:												
Skaha	7s	---	---	---	---	---	---	---	---	---	---	---
427:												
Skaha	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
428:												
Skanid	6e	---	---	---	---	---	---	---	---	---	---	---
429:												
Skanid	6e	---	---	---	---	---	---	---	---	---	---	---
430:												
Skanid	7e	---	---	---	---	---	---	---	---	---	---	---
431:												
Skanid	6e	---	---	---	---	---	---	---	---	---	---	---
432:												
Skanid	6e	---	---	---	---	---	---	---	---	---	---	---
433:												
Skanid	7e	---	---	---	---	---	---	---	---	---	---	---
434:												
Skanid	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
435:												
Skanid	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
435:												
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
436:												
Skanid-------------	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
437:												
Spens--------------	6s	---	---	---	---	---	---	---	---	---	---	---
438:												
Spens--------------	7s	---	---	---	---	---	---	---	---	---	---	---
439:												
Spokane------------	4e	4e	1.00	2.50	20.00	---	1.00	3.00	15.00	---	25.00	50.00
440:												
Spokane------------	6e	---	---	---	---	---	---	---	---	---	---	---
441:												
Spokane------------	7e	---	---	---	---	---	---	---	---	---	---	---
442:												
Spokane------------	6e	---	---	---	---	---	---	---	---	---	---	---
443:												
Spokane------------	7e	---	---	---	---	---	---	---	---	---	---	---
444:												
Spokane------------	4e	4e	1.00	2.50	20.00	---	1.00	3.00	15.00	---	25.00	50.00
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
445:												
Spokane------------	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
446:												
Spokane------------	4e	4e	1.00	2.50	20.00	---	1.00	3.00	15.00	---	25.00	50.00
Skanid-------------	6e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
447:												
Spokane	6e	---	---	---	---	---	---	---	---	---	---	---
Skanid	6e	---	---	---	---	---	---	---	---	---	---	---
448:												
Spokane	7e	---	---	---	---	---	---	---	---	---	---	---
Skanid	7e	---	---	---	---	---	---	---	---	---	---	---
449:												
Springdale	4e	4e	---	6.00	---	---	1.50	4.00	---	---	20.00	60.00
450:												
Springdale	4e	6e	---	6.00	---	---	1.50	3.50	---	---	15.00	---
451:												
Springdale	7e	---	---	---	---	---	---	---	---	---	---	---
452:												
Stapaloop	3e	4e	1.20	4.50	35.00	---	1.50	5.00	35.00	---	40.00	---
453:												
Stapaloop	6e	---	---	---	---	---	---	---	---	---	---	---
454:												
Stapaloop	3e	4e	1.20	4.50	35.00	---	1.50	5.00	35.00	---	40.00	---
455:												
Stepstone	3e	4e	1.00	3.50	25.00	---	1.00	4.00	25.00	---	30.00	---
456:												
Stepstone	6e	---	---	---	---	---	---	---	---	---	---	---
457:												
Stepstone	7e	---	---	---	---	---	---	---	---	---	---	---
458:												
Stepstone	6s	---	---	---	---	---	---	---	---	---	---	---
459:												
Stevens	2e	2e	2.20	5.20	40.00	---	3.00	5.00	40.00	---	50.00	70.00
460:												
Stevens	3e	4e	2.10	5.00	40.00	---	3.00	5.00	35.00	---	45.00	65.00

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
461:												
Stevens	4e	6e	2.00	4.80	35.00	---	2.50	4.50	30.00	---	40.00	---
462:												
Stevens	7e	---	---	---	---	---	---	---	---	---	---	---
463:												
Strat	6e	4e	---	5.00	---	---	---	6.00	---	---	---	80.00
464:												
Stubblefield	6s	---	---	---	---	---	---	---	---	---	---	---
465:												
Swakane	7e	---	---	---	---	---	---	---	---	---	---	---
466:												
Swakane	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
467:												
Swakane	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
468:												
Swipkin	2c	2e	3.00	5.00	40.00	---	3.50	5.50	40.00	---	50.00	70.00
469:												
Swipkin	2e	3e	3.00	5.00	40.00	---	3.50	5.50	40.00	---	50.00	70.00
470:												
Thout	6e	---	---	---	---	---	---	---	---	---	---	---
471:												
Thout	4e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
472:												
Thout	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
473:												
Thout	7e	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
473:												
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
474:												
Timentwa-----------	2e	2e	---	5.00	45.00	---	1.50	6.00	40.00	---	25.00	---
475:												
Timentwa-----------	3e	4e	---	5.00	45.00	---	---	6.00	40.00	---	25.00	---
476:												
Timentwa-----------	6s	---	---	---	---	---	---	---	---	---	---	---
477:												
Timentwa-----------	7e	---	---	---	---	---	---	---	---	---	---	---
Timentwa-----------	7e	---	---	---	---	---	---	---	---	---	---	---
478:												
Timentwa-----------	7s	---	---	---	---	---	---	---	---	---	---	---
Timentwa-----------	7s	---	---	---	---	---	---	---	---	---	---	---
479:												
Timentwa-----------	3e	---	---	---	---	---	---	---	---	---	---	---
Bakeoven-----------	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---
480:												
Togo---------------	6e	---	---	---	---	---	---	---	---	---	---	---
481:												
Togo---------------	6e	---	---	---	---	---	---	---	---	---	---	---
482:												
Togo---------------	7e	---	---	---	---	---	---	---	---	---	---	---
483:												
Togo---------------	6e	---	---	---	---	---	---	---	---	---	---	---
484:												
Togo---------------	6s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop-------	8s	---	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
485:												
Torboy	3e	4e	1.00	4.00	16.00	---	1.00	3.50	18.00	---	20.00	35.00
486:												
Torboy	6e	---	---	---	---	---	---	---	---	---	---	---
487:												
Torrifluventic Haploxerolls	6e	4e	---	5.50	---	---	---	6.00	---	---	20.00	70.00
488:												
Tunkcreek	6e	---	---	---	---	---	---	---	---	---	---	---
489:												
Tunkcreek	6e	---	---	---	---	---	---	---	---	---	---	---
490:												
Tyee	6e	---	---	---	---	---	---	---	---	---	---	---
491:												
Tyee	7e	---	---	---	---	---	---	---	---	---	---	---
492:												
Tyee	7e	---	---	---	---	---	---	---	---	---	---	---
493:												
Tyee	7e	---	---	---	---	---	---	---	---	---	---	---
Morical	6e	---	---	---	---	---	---	---	---	---	---	---
Tyee	7e	---	---	---	---	---	---	---	---	---	---	---
494:												
Tyee	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
495:												
Tyee	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
496:												
Typic Haplaquolls	5w	---	---	---	---	---	5.00	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
497:												
Typic Xerorthents--	7e	---	---	---	---	---	---	---	---	---	---	---
Typic Xerochrepts--	7e	---	---	---	---	---	---	---	---	---	---	---
498:												
Ultic Haploxerolls	7e	---	---	---	---	---	---	---	---	---	---	---
499:												
Uncas	5w	---	---	---	---	---	2.00	---	---	---	---	---
500:												
Vanbrunt	6s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
501:												
Vanbrunt	6s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
502:												
Vanbrunt	7s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
503:												
Wannacott	3e	---	---	---	35.00	---	---	---	35.00	---	40.00	---
504:												
Wannacott	3e	---	---	---	35.00	---	---	---	35.00	---	40.00	---
505:												
Wapal	4e	4e	1.00	3.50	20.00	---	1.00	4.00	20.00	---	25.00	50.00
506:												
Wapal	6s	---	---	---	---	---	---	---	---	---	---	---
507:												
Wapal	4e	6e	1.00	3.00	15.00	---	1.00	3.50	15.00	---	20.00	---
508:												
Wapal	7e	---	---	---	---	---	---	---	---	---	---	---
509:												
Wellscreek	3e	4e	1.40	3.00	50.00	---	1.60	2.50	50.00	---	60.00	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
510:												
Wellscreek	6e	---	---	---	---	---	---	---	---	---	---	---
511:												
Wellscreek	7e	---	---	---	---	---	---	---	---	---	---	---
512:												
Whitestone	3e	4e	2.00	5.00	30.00	---	2.50	5.50	30.00	---	35.00	65.00
513:												
Whitestone	6e	---	---	---	---	---	---	---	---	---	---	---
514:												
Whitestone	7e	---	---	---	---	---	---	---	---	---	---	---
515:												
Whitestone	7s	---	---	---	---	---	---	---	---	---	---	---
516:												
Whitestone	6e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
517:												
Wilmont	6e	---	---	---	---	---	---	---	---	---	---	---
518:												
Wilmont	7e	---	---	---	---	---	---	---	---	---	---	---
519:												
Wilmont	6e	---	---	---	---	---	---	---	---	---	---	---
520:												
Wilmont	7e	---	---	---	---	---	---	---	---	---	---	---
521:												
Winchester	7e	4e	---	6.00	---	---	---	7.00	---	---	---	100.00
522:												
Winchester	7e	6e	---	6.00	---	---	---	6.50	---	---	---	100.00
523:												
Winchester	7e	7e	---	---	---	---	---	---	---	---	---	---

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability		Alfalfa hay		Barley		Grass-legume hay		Spring wheat		Winter wheat	
	N	I	N	I	N	I	N	I	N	I	N	I
			Tons	*Tons*	*Bu*	*Bu*	*Tons*	*Tons*	*Bu*	*Bu*	*Bu*	*Bu*
524:												
Winchester	7e	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
525:												
Winthrop	6e	---	---	---	---	---	---	---	---	---	---	---
526:												
Wynhoff	6s	---	---	---	---	---	---	---	---	---	---	---
527:												
Wynhoff	7s	---	---	---	---	---	---	---	---	---	---	---
528:												
Xeric Torriorthents	6e	---	---	---	---	---	---	---	---	---	---	---
529:												
Xeric Torriorthents	7e	---	---	---	---	---	---	---	---	---	---	---
530:												
Xerochrepts	7s	---	---	---	---	---	---	---	---	---	---	---
Rubble land	8s	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---	---	---	---	---	---
531:												
Water	---	---	---	---	---	---	---	---	---	---	---	---
532:												
Dam	---	---	---	---	---	---	---	---	---	---	---	---

Table 6.--Grazing Management Development Limitations

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
1: Achimin	Slight	Moderate: seepage	Slight	Slight	Slight
2: Achimin	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
Calcic Pachic Haploxerolls	Severe: soil wetness	Moderate: slope, seepage	Moderate: soil wetness	Moderate: soil wetness	Moderate: soil wetness
3: Aeneas	Slight: seepage	Severe	Slight	Slight	Slight
4: Aeneas	Slight: seepage, slope	Severe	Slight	Slight	Slight
5: Ahtanum	Moderate: soil wetness	Moderate: depth to the hardpan, seepage, brackish water	Severe: excess sodium, excess salts, soil wetness	Moderate: soil wetness	Moderate: flooding hazard, soil wetness
6: Aits	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
7: Aits	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
8: Aits	Slight	Moderate: seepage	Slight	Slight	Moderate: snow damage
9: Anders	Moderate: depth to bedrock	Moderate: depth to bedrock, seepage	Slight	Slight	Slight
10: Andic Cryaquepts	Severe: soil wetness	Severe: seepage	Severe: soil wetness	Slight	Slight
11: Annum	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
12: Annum	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
13: Annum	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
Annum	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
14:					
Apex	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
15:					
Apex	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
16:					
Apex	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
17:					
Apex	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
18:					
Apex	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
19:					
Apex	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
20:					
Aquic Xerofluvents	Moderate: soil wetness	Moderate: seepage	Severe: soil wetness	Moderate: soil wetness	Moderate: soil wetness, snow damage
21:					
Aquic Xerofluvents	Moderate: soil wetness	Severe: seepage	Moderate: soil wetness	Moderate: soil wetness	Moderate: snow damage
22:					
Aquic Xerofluvents	Moderate: soil wetness	Moderate: seepage	Severe: soil wetness	Moderate: soil wetness	Moderate: soil wetness, snow damage
23:					
Badge	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, surface stones	Severe: rock fragments in the soil, slope
24:					
Badge	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, surface stones	Severe: rock fragments in the soil, slope
Rubble land.					
25:					
Badland.					

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
26:					
Bakeoven	Severe: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage, slope	Severe: depth to bedrock, surface cobbles, rock fragments in the soil	Severe: depth to bedrock, surface cobbles, rock fragments in the soil	Severe: depth to bedrock, rock fragments in the soil
27:					
Bakeoven	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock	Severe: depth to bedrock, surface cobbles, rock fragments in the soil, slope	Severe: surface cobbles, slope	Severe: depth to bedrock, rock fragments in the soil
Olical	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
28:					
Bakeoven	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, slope, seepage	Severe: depth to bedrock, surface cobbles, rock fragments in the soil, slope	Severe: surface cobbles, slope	Severe: depth to bedrock, rock fragments in the soil
Timentwa	Moderate: slope	Severe: slope, depth to the hardpan	Moderate: slope	Moderate: slope	Slight
Rock outcrop.					
29:					
Baldknob	Severe: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage	Severe: surface stones, rock fragments in the soil	Severe: surface stones, rock fragments in the soil	Severe: depth to bedrock, rock fragments in the soil, snow damage
Thout	Moderate: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage	Slight	Moderate: rock fragments in the soil	Moderate: rock fragments in the soil, snow damage
Rock outcrop.					
30:					
Baldknob	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, seepage, slope	Severe: surface stones, rock fragments in the soil, slope	Severe: surface stones, rock fragments in the soil, slope	Severe: depth to bedrock, rock fragments in the soil, snow damage, slope
Thout	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
Rock outcrop.					
31:					
Barnellcreek	Slight	Severe: seepage, slope	Slight	Slight	Moderate: snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
32:					
Bearspring	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope, rock fragments in the soil	Moderate: slope, snow damage
33:					
Bearspring	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope, rock fragments in the soil	Severe: slope, rock fragments in the soil, snow damage
34:					
Bernhill	Slight	Moderate: seepage	Slight	Slight	Moderate: snow damage
35:					
Bernhill	Slight	Moderate: slope, seepage	Moderate: slope	Slight	Slight
36:					
Beverly	Moderate: slope, rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Severe: loose sandy droughty surface layer	Moderate: rock fragments in the soil	Moderate: rock fragments in the soil, loose sandy surface layer
37:					
Bisbee	Moderate: ditchbanks cave	Severe: seepage, slope	Moderate: loose sandy surface layer	Slight	Moderate: snow damage
38:					
Bisbee	Severe: slope, ditchbanks cave	Severe: seepage, slope	Severe: slope, loose sandy surface layer	Severe: slope	Moderate: snow damage, slope
39:					
Boesel	Moderate: ditchbanks cave, soil wetness	Severe: seepage	Moderate: soil wetness	Slight	Moderate: snow damage
40:					
Bong	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Moderate: slope	Slight	Moderate: snow damage
41:					
Bong	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
42:					
Bong	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
43:					
Borgeau	Moderate: slope, rock fragments in the soil	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
44:					
Borgeau	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope
45:					
Borgeau	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.					
46:					
Borosaprists	Severe: ponded water	Severe: ponded water	Severe: ponded water	Severe ponded water	Severe: ponded water
47:					
Bossburg	Severe: soil wetness	Moderate: seepage	Severe: soil wetness	Severe: soil wetness	Moderate: soil wetness, snow damage
48:					
Broadax	Slight	Moderate: seepage	Slight	Slight	Slight
49:					
Broadax	Slight	Moderate: seepage	Slight	Slight	Slight
50:					
Brusher	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
51:					
Brusher	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: snow damage, slope
52:					
Brusher	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
53:					
Brusher	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
54:					
Buhrig	Severe: rock fragments in the soil, slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, rock fragments in the soil	Severe: rock fragments in the soil, snow damage, slope
55:					
Buhrig	Severe: rock fragments in the soil, slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, rock fragments in the soil	Severe: rock fragments in the soil, snow damage, slope

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
56:					
Buhrig	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
57:					
Buhrig	Severe: rock fragments in the soil, slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, rock fragments in the soil	Severe: rock fragments in the soil, snow damage, slope
Rock outcrop.					
58:					
Buhrig	Severe: rock fragments in the soil, slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, rock fragments in the soil	Severe: rock fragments in the soil, snow damage, slope
Rock outcrop.					
59:					
Canteen	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope.	Moderate: slope, snow damage
60:					
Canteen	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
61:					
Canteen	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
62:					
Canteen	Severe: slope	Severe: slope, seepage	Severe: slope	Moderate: slope	Severe: slope, snow damage
63:					
Capoose	Moderate: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Moderate: slope	Severe: slope	Moderate: slope, snow damage
64:					
Capoose	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
65:					
Capoose	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
Rock outcrop.					
66:					
Capoose	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
Rock outcrop.					
67:					
Cashmere	Slight	Severe: seepage	Slight	Slight	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
68:					
Cashmere	Slight	Severe: seepage	Slight	Slight	Slight
69:					
Cashmere	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
70:					
Cashmere	Moderate: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope
71:					
Cashmont	Slight	Severe: seepage, slope	Moderate: droughty surface layer	Slight	Slight
72:					
Cashmont	Moderate: slope	Severe: slope, seepage	Moderate: slope, droughty surface layer	Moderate: slope	Moderate: slope
73:					
Cedonia	Slight	Slight	Slight	Slight	Moderate: snow damage
74:					
Cedonia	Slight	Moderate: slope	Slight	Slight	Moderate: snow damage
75:					
Cedonia	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope	Moderate: snow damage, slope
76:					
Cedonia	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: snow damage, slope
77:					
Centralpeak	Moderate: depth to bedrock	Severe: depth to bedrock, slope, seepage	Moderate: slope	Slight	Moderate: snow damage
Centralpeak	Moderate: depth to bedrock	Severe: depth to bedrock, slope, seepage	Moderate: slope	Slight	Moderate: snow damage
78:					
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
79:					
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
79:					
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
80:					
Centralpeak	Moderate: depth to bedrock	Moderate: slope, seepage, depth to bedrock	Slight	Moderate: slope	Moderate: snow damage
81:					
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: snow damage
82:					
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
83:					
Centralpeak	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: snow damage
Brusher	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: snow damage
84:					
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
Centralpeak	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
Rock outcrop.					
85:					
Chumstick	Severe: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage	Severe: surface stones	Moderate: surface stones	Severe: depth to bedrock, rock fragments in the soil, snow damage
Rock outcrop.					
86:					
Chumstick	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: depth to bedrock, rock fragments in the soil, slope, snow damage
Rock outcrop.					
87:					
Codylake	Slight	Severe: seepage, slope	Slight	Slight	Severe: snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
88:					
Codylake	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
89:					
Codylake	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
90:					
Colockum	Slight	Moderate: slope, seepage	Slight	Slight	Slight
91:					
Colockum	Moderate: slope	Moderate: slope	Moderate: surface stones, slope	Moderate: surface stones, slope	Slight
92:					
Colockum	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, rock fragments in the soil
93:					
Conconully	Slight	Moderate: slope, seepage	Slight	Slight	Slight
94:					
Conconully	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: slope
95:					
Conconully	Moderate: rock fragments in the soil	Severe: slope, seepage	Moderate: surface stones	Moderate: surface stones	Moderate: rock fragments in the soil
96:					
Conconully	Severe: slope	Severe: slope, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope
97:					
Conconully	Severe: slope	Severe: slope, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope
98:					
Conconully	Moderate: slope, bouldery surface layer	Severe: slope, seepage	Moderate: slope, surface boulders	Moderate: slope, surface boulders	Moderate: bouldery surface layer
99:					
Conconully	Moderate: rock fragments in the soil	Moderate: slope, seepage	Moderate: surface stones	Moderate: surface stones	Moderate: rock fragments in the soil
Bakeoven	Severe: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, slope	Severe: depth to bedrock, surface cobbles, rock fragments in the soil	Severe: surface cobbles, rock fragments in the soil	Severe: depth to bedrock, rock fragments in the soil

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
100:					
Conconully	Moderate: rock fragments in the soil, slope	Severe: slope, seepage	Severe: surface stones, slope	Severe: surface stones, slope	Moderate: rock fragments in the soil
Rock outcrop.					
101:					
Conconully	Severe: rock fragments in the soil, slope	Severe: slope, seepage	Severe: surface stones, slope	Severe: surface stones, slope	Severe: rock fragments in the soil, slope
Rock outcrop.					
102:					
Conconully	Moderate: slope, rock fragments in the soil	Severe: slope, seepage	Moderate: slope, surface boulders	Moderate: slope, surface boulders	Moderate: rock fragments in the soil
Swakane	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface stones, rock fragments in the soil	Severe: slope, surface stones	Severe: depth to bedrock, rock fragments in the soil
Rock outcrop.					
103:					
Couleedam	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface stones, droughty surface layer, rock fragments in the soil	Severe: slope, surface stones, rock fragments in the soil	Severe: depth to bedrock, rock fragments in the soil, slope
Rock outcrop.					
104:					
Coxlake	Severe: soil wetness	Severe: seepage	Severe: soil wetness, snow damage	Severe: soil wetness	Moderate: soil wetness, snow damage
105:					
Cryofluvents	Slight	Severe: seepage	Slight	Slight	Severe: snow damage
106:					
Cubcreek	Moderate: soil wetness	Severe: seepage	Moderate: soil wetness, snow damage	Moderate: soil wetness	Moderate: snow damage
107:					
Cumulic Haploxerolls	Slight	Severe: seepage	Slight	Slight	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
108:					
Dart	Moderate: ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy layer
109:					
Dart	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope, loose sandy droughty surface layer	Severe: slope	Severe: slope, loose sandy surface layer
110:					
Dart	Moderate: ditchbanks cave, slope	Severe: seepage, slope	Severe: loose sandy droughty surface layer, slope	Moderate: slope	Moderate: loose sandy surface layer
Springdale	Moderate: rock fragments in the soil, ditchbanks cave, slope		Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil
111:					
Dart	Severe: ditchbanks cave, slope	Severe: seepage, slope	Severe: loose sandy droughty surface layer, slope	Severe: slope	Severe: slope, loose sandy surface layer
Springdale	Severe: ditchbanks cave, rock fragments in the soil, slope		Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil
112:					
Dehart	Moderate: slope, rock fragments in the soil	Severe: slope, seepage	Moderate: slope	Moderate: slope, rock fragments in the soil	Moderate: rock fragments in the soil, snow damage
113:					
Dehart	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope, rock fragments in the soil	Severe: slope, snow damage, rock fragments in the soil
114:					
Dehart	Severe: slope, rock fragments in the soil	Severe: seepage, slope	Severe: slope	Severe: slope, rock fragments in the soil	Severe: rock fragments in the soil, slope
Phoebe	Severe: slope	Severe: slope, seepage	Severe slope	Severe: slope	Severe: slope
115:					
Dehart	Moderate: slope, rock fragments in the soil	Severe: slope, seepage	Moderate: slope	Moderate: slope, rock fragments in the soil	Moderate: snow damage, rock fragments in the soil

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
115: Rock outcrop.					
116: Dehart	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Moderate: slope	Severe: slope, rock fragments in the soil	Severe: slope, snow damage, rock fragments in the soil
Rock outcrop.					
117: Dinkelman	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
118: Dinkelman	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
119: Dinkelman	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
120: Disautel	Slight	Moderate: seepage	Slight	Slight	Slight
121: Disautel	Slight	Moderate: slope, seepage	Slight	Slight	Slight
122: Disautel	Slight	Moderate: slope, seepage	Slight	Slight	Slight
Nespelem	Moderate: depth to the hardpan	Moderate: depth to the hardpan	Slight	Slight	Slight
123: Disautel	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
Rock outcrop.					
124: Donavan	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
125: Donavan	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: snow damage, slope
126: Donavan	Moderate: slope	Moderate: slope, seepage	Moderate: slope, surface boulders	Moderate: slope, surface boulders	Moderate: snow damage
127: Donavan	Severe: slope	Severe: slope, seepage	Severe: slope surface boulders	Severe: slope, surface boulders	Moderate: slope, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
128:					
Donavan	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
129:					
Donavan	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: slope, snow damage
130:					
Donavan	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
131:					
Donavan	Slight	Moderate: slope, seepage	Moderate: surface boulders	Moderate: surface boulders	Moderate: snow damage
132:					
Donavan	Severe: slope	Severe: slope, seepage	Severe: slope, surface boulders	Severe slope, surface boulders	Moderate: slope, snow damage
133:					
Donavan	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
Goldlake	Moderate: soil wetness	Moderate: slope	Moderate: soil wetness	Slight	Moderate
134:					
Donavan	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: snow damage
Northstar	Moderate: rock fragments in the soil, snow damage	Severe: slope, depth to bedrock, seepage	Moderate: slope, rock fragments in the soil	Moderate: slope, rock fragments in the soil	Moderate: rock fragments in the soil, snow damage
135:					
Donavan	Moderate: slope	Moderate: slope, seepage	Moderate: slope, surface boulders	Slight	Moderate: snow damage
Rock outcrop.					
136:					
Donavan	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
Rock outcrop.					
137:					
Donavan	Moderate: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
Rock outcrop.					
138:					
Donavan	Severe: slope	Severe: slope, seepage	Severe: slope, surface boulders	Severe slope, surface boulders	Moderate: slope, snow damage
Rock outcrop.					

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
139:					
Duleylake	Slight	Moderate: seepage	Slight	Slight	Slight
140:					
Elbowlake	Slight	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
141:					
Elbowlake	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
142:					
Elbowlake	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
143:					
Elbowlake	Slight slope	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage
144:					
Elbowlake	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
145:					
Elbowlake	Severe: slope	Severe: slope, seepage	Severe: slope	Slight	Severe: slope, snow damage
146:					
Ellisforde	Slight	Slight	Slight	Slight	Slight
147:					
Ellisforde	Slight	Moderate: slope	Slight	Slight	Slight
148:					
Ellisforde	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope	Slight
149:					
Elvedere	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope	Moderate: slope, dense clayey substratum
150:					
Elvedere	Moderate: slope, dense clayey substratum	Severe: slope	Moderate: slope, surface stones	Moderate: slope, surface stones	Moderate: dense clayey substratum
151:					
Elvedere	Severe: slope, dense clayey substratum	Severe: slope	Severe: slope, surface stones	Severe: slope, surface stones	Moderate: slope, dense clayey substratum
152:					
Elvedere	Moderate: dense clayey substratum	Moderate: slope	Moderate: excess sodium and salts	Slight	Moderate: dense clayey substratum
Leahy	Moderate	Slight	Severe: excess sodium and salts	Slight	Moderate

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
153:					
Emdent	Severe: soil wetness	Moderate: seepage	Severe: excess sodium and salts, soil wetness	Severe: soil wetness	Moderate: soil wetness
154:					
Emdent	Severe: soil wetness	Moderate: seepage	Severe: excess sodium and salts, soil wetness	Severe: soil wetness	Moderate: soil wetness
155:					
Ewall	Moderate: ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer, snow damage
156:					
Ewall	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Severe: loose sandy droughty surface layer, slope	Moderate: slope	Moderate: loose sandy surface layer, snow damage
157:					
Ewall	Moderate: ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer
158:					
Ewall	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Severe: loose sandy droughty surface layer, slope	Moderate: slope	Moderate: loose sandy surface layer
159:					
Ewall	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope, loose sandy droughty surface layer	Severe: slope	Severe: slope, loose sandy surface layer
160:					
Farrell	Slight	Severe: seepage	Slight	Slight	Slight
161:					
Farrell	Slight	Severe: seepage, slope	Slight	Slight	Slight
162:					
Farrell	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
163:					
Farrell	Moderate: boulders in the surface layer	Severe: seepage, slope	Severe: surface boulders	Severe: surface boulders	Moderate: surface boulders

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
164:					
Fivelakes	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope, surface boulders, rock fragments in the soil	Severe: surface boulders, slope	Severe: rock fragments in the soil, slope
165:					
Fivelakes	Moderate: ditchbanks cave, soil wetness	Severe: seepage	Slight	Slight	Moderate: rock fragments in the soil
166:					
Fivelakes	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Moderate: surface stones	Moderate: surface stones	Moderate: rock fragments in the soil
167:					
Fivelakes	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil
168:					
Fivelakes	Severe: rock fragments in the soil, slope, ditchbanks cave	Severe: slope, seepage	Severe: surface boulders rock fragments in the soil, slope	Severe: surface boulders, rock fragments in the soil, slope	Severe: rock fragments in the soil
169:					
Friedlander	Slight	Moderate: seepage, slope	Slight	Slight	Moderate: snow damage
170:					
Friedlander	Severe: slope	Severe: slope, seepage	Severe: slope	Severe slope	Moderate: slope, snow damage
171:					
Friedlander	Slight	Moderate: seepage, slope	Slight	Slight	Moderate: snow damage
172:					
Garrison	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
173:					
Garrison	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
174:					
Garrison	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: slope, rock fragments in the soil, snow damage
175:					
Georgecreek	Slight	Moderate: slope, depth to bedrock, seepage	Slight	Slight	Moderate: snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
176:					
Georgecreek	Severe: slope	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
177:					
Georgecreek	Slight	Moderate: slope, depth to bedrock, seepage	Slight	Slight	Moderate: snow damage
178:					
Georgecreek	Severe: slope	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
179:					
Ginnis	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope
180:					
Ginnis	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: slope
181:					
Ginnis	Moderate: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Moderate: slope	Moderate: slope	Moderate: slope
182:					
Ginnis	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: slope
Ginnis	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: slope
183:					
Ginnis	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope, surface cobbles	Moderate: slope, surface cobbles	Moderate: slope
Ginnis	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope, surface cobbles	Moderate: slope, surface cobbles	Moderate: slope
184:					
Ginnis	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Slight
Conconully	Moderate: slope	Severe: slope, seepage	Moderate: slope, surface stones	Moderate: slope, surface stones	Slight
185:					
Ginnis	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
185:					
Conconully	Severe: slope	Severe: slope, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope
186:					
Ginnis	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope
Rock outcrop.					
187:					
Glenrose	Slight	Moderate: seepage, slope	Slight	Slight	Moderate: snow damage
188:					
Glenrose	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: slope, snow damage
189:					
Goddard	Moderate: ditchbanks cave	Severe: slope, seepage	Slight	Slight	Moderate: snow damage
190:					
Goddard	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
191:					
Goddard	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
192:					
Goldlake	Moderate: soil wetness	Moderate: seepage	Slight	Moderate: soil wetness	Moderate: snow damage
193:					
Gooseflats	Severe: soil wetness, ditchbanks cave	Severe: seepage	Severe: excess sodium and salts, droughty surface layer, soil wetness	Severe: soil wetness	Moderate: soil wetness, loose sandy surface layer
Gooseflats	Severe: soil wetness, ditchbanks cave	Severe: seepage	Severe: excess sodium and salts, droughty surface layer, soil wetness	Severe: soil wetness	Moderate: soil wetness, loose sandy surface layer
194:					
Growden	Severe: rock fragments in the soil, slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, rock fragments in the soil, slope
195:					
Hadencreek	Moderate: soil wetness	Slight	Moderate: soil wetness	Moderate: soil wetness	Slight
196:					
Haley	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
197:					
Haley	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Slight
198:					
Haley	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
199:					
Hallcreek	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
200:					
Haploxerolls	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope, rock fragments in the soil	Severe: slope	Severe: slope, rock fragments in the soil
201:					
Hartill	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
202:					
Hartill	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
203:					
Hellgate	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
204:					
Hellgate	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
205:					
Henneway	Slight	Moderate: slope, seepage, depth to bedrock	Slight	Slight	Moderate: snow damage
206:					
Henneway	Severe: slope	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
207:					
Henneway	Severe: slope	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
208:					
Heytou	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, surface stones	Severe: rock fragments in the soil, slope
Stubblefield	Severe: depth to the hardpan, slope, rock fragments in the soil	Severe: slope, depth to hardpan, seepage	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, surface stones	Severe

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
209: Histosols	Severe: permanently ponded	Severe: permanently ponded	Severe: permanently ponded	Severe: permanently ponded	Severe: permanently ponded
210: Hobohill	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope
211: Hobohill	Moderate: ditchbanks cave	Severe: seepage, slope	Moderate: surface stones	Moderate: surface stones	Slight
212: Hodgson	Slight	Slight	Slight	Slight	Moderate: snow damage
213: Hodgson	Slight	Moderate: slope	Slight	Slight	Moderate: snow damage
214: Hodgson	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope	Moderate: slope, snow damage
215: Hodgson	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope, snow damage
216: Hudnut	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
217: Hudnut	Severe: slope, ditchbanks cave	Severe: seepage, slope	Severe: slope	Severe: slope	Moderate: snow damage, slope
218: Hunters	Slight	Moderate: seepage	Slight	Slight	Moderate: snow damage
219: Hunters	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope	Severe: slope
220: Inchelium	Slight	Slight	Slight	Slight	Moderate: snow damage
221: Inchelium	Slight	Slight	Slight	Slight	Moderate: snow damage
222: Inkler	Moderate: rock fragments in the soil	Moderate: slope, seepage	Slight	Slight	Moderate: rock fragments in the soil, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
223:					
Inkler	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, snow damage, slope
224:					
Inkler	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
225:					
Inkler	Moderate: rock fragments in the soil, slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage
Baldknob	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, surface stones, rock fragments in the soil, slope	Severe: slope, surface stones	Severe: depth to bedrock, rock fragments in the soil, snow damage
Rock outcrop.					
226:					
Inkler	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
Baldknob	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, surface stones, rock fragments in the soil, slope	Severe: slope, surface stones	Severe: slope, depth to bedrock, rock fragments in the soil, snow damage
Rock outcrop.					
227:					
Inkler	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, snow damage, slope
Rock outcrop.					
228:					
Inkler	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
Rock outcrop.					
229:					
Jimcreek	Severe: soil wetness	Moderate: seepage	Severe: soil wetness	Severe: soil wetness	Moderate: soil wetness, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
230:					
Johntom	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, surface stones	Severe: depth to bedrock, slope, rock fragments in the soil
Rock outcrop.					
Rubble land.					
231:					
Karamin	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
232:					
Karamin	Severe: slope, ditchbanks cave	Severe: seepage, slope	Severe: slope	Severe: slope	Moderate: slope, snow damage
233:					
Karamin	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
234:					
Kartar	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
235:					
Kellerbutte	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
236:					
Kellerbutte	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
237:					
Kenotrail	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
238:					
Kewach	Slight	Slight	Slight	Slight	Moderate: snow damage
239:					
Kewach	Slight	Moderate: slope	Slight	Slight	Moderate: snow damage
240:					
Kewach	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope	Moderate: slope, snow damage
241:					
Kewach	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope, snow damage

Table 6.-Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
242:					
Kiehl	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage, rock fragments in the soil
243:					
Kiehl	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
244:					
Kiehl	Severe: slope, ditchbanks cave, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil
245:					
Kiehl	Moderate: slope, rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Moderate: slope	Slight	Moderate: rock fragments in the soil, snow damage
246:					
Kiehl	Severe: slope, ditchbanks cave, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, rock fragments in the soil, snow damage
247:					
Kiehl	Severe: slope, ditchbanks cave, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
248:					
Koepke	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: slope, snow damage
249:					
Lakesol	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope, snow damage
250:					
Lithic Xerorthents	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: depth to bedrock, slope	Severe: depth to bedrock, snow damage, slope
Baldknob	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, surface stones, rock fragments in the soil, slope	Severe: depth to bedrock, surface stones, slope	Severe: depth to bedrock, rock fragments in the soil, snow damage, slope
Rock outcrop.					

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
251: Lithic Xerorthents	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: depth to bedrock, slope	Severe: depth to bedrock, snow damage, slope
Baldknob	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, surface stones, rock fragments in the soil, slope	Severe: depth to bedrock, surface stones, slope	Severe: depth to bedrock, rock fragments in the soil, snow damage, slope
Rock outcrop.					
252: Logy	Severe: rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Severe: surface stones, rock fragments in the soil, droughty surface layer	Severe: surface stones	Severe: rock fragments in the soil
253: Loony	Moderate: depth to dense glacial till	Moderate: depth to dense glacial till	Slight	Slight	Moderate: snow damage
254: Lostcreek	Moderate: soil wetness	Moderate: seepage, slope	Slight	Slight	Moderate: snow damage
255: Louiecreek	Moderate: rock fragments in the soil	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
256: Louploup	Slight	Moderate: seepage, slope	Slight	Slight	Moderate: snow damage
257: Louploup	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
258: Lynxcreek	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
259: Malott	Slight	Moderate: seepage, depth to the hardpan	Slight	Slight	Slight
260: Malott	Slight	Moderate: slope, seepage, depth to the hardpan	Slight	Slight	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
261:					
Malott	Moderate: slope	Severe: slope, seepage, depth to the hardpan	Moderate: slope	Moderate: slope	Slight
262:					
Malott	Moderate: rock fragments in the soil	Moderate: slope, depth to the hardpan, seepage	Moderate: slope, surface stones	Moderate: slope, surface stones	Moderate: rock fragments in the soil
263:					
Malott	Severe: slope, rock fragments in the soil	Severe: slope, depth to hardpan, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil
264:					
Malott	Moderate: rock fragments in the soil	Moderate: slope, depth to the hardpan, seepage	Moderate: slope, surface stones	Moderate: slope, surface stones	Moderate: rock fragments in the soil
Rock outcrop.					
265:					
Malott	Severe: slope, rock fragments in the soil	Severe: slope, depth to the hardpan, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil
Rock outcrop.					
266:					
Malott	Severe: slope, rock fragments in the soil	Severe: slope, depth to the hardpan, seepage	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, surface stones, rock fragments in the soil	Severe: slope, rock fragments in the soil
Torriorthents	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope
267:					
Manley	Slight	Moderate: slope, seepage	Slight	Slight	Severe: snow damage
268:					
Manley	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
269:					
Manley	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
270:					
Manley	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
270:					
Codylake	Severe: slope	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
271:					
Manley	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
Rock outcrop.					
272:					
Manley	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
Rock outcrop.					
273:					
Martella	Slight	Slight	Slight	Slight	Moderate: snow damage
274:					
Martella	Slight	Slight	Slight	Slight	Moderate: snow damage
275:					
Martella	Moderate: slope	Moderate to severe: slope	Moderate: slope	Moderate: slope	Moderate: snow damage
276:					
Medisaprists	Severe: seasonal high water table	Slight	Severe: prolonged soil wetness	Severe: prolonged soil wetness	Severe: prolonged soil wetness
277:					
Merkel	Slight	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
278:					
Merkel	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
279:					
Merkel	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
280:					
Merkel	Moderate: bouldery surface layer	Severe: seepage, slope	Moderate: surface boulders	Moderate: surface boulders	Moderate: bouldery surface layer, snow damage
281:					
Merkel	Severe: bouldery surface layer, slope	Severe: slope, seepage	Severe: slope, surface boulders	Severe: slope, surface boulders	Moderate: bouldery surface layer, slope, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
282:					
Mineral	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Moderate: slope, rock fragments in the soil, snow damage
283:					
Mineral	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, seepage, depth to bedrock	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil, snow damage
284:					
Mineral	Moderate: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage, slope	Moderate: surface stones	Moderate: surface stones	Moderate: rock fragments in the soil
Rock outcrop.					
285:					
Mineral	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Moderate: slope, rock fragments in the soil, snow damage
Rock outcrop.					
286:					
Mineral	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, seepage, depth to bedrock	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil, snow damage
Rock outcrop.					
287:					
Mineral	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, seepage, depth to bedrock	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil, snow damage
Rock outcrop.					
288:					
Mitchellpoint	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
289:					
Monse	Moderate: soil wetness	Moderate: seepage	Slight	Slight	Slight
290:					
Morical	Moderate: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
291:					
Morical	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: slope
292:					
Morical	Moderate: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Slight
293:					
Moscow	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
294:					
Moscow	Severe: slope, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage
295:					
Moses	Moderate: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Moderate: slope	Slight	Severe: snow damage, rock fragments in the soil
296:					
Moses	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope, rock fragments in the soil
297:					
Moses	Severe: slope, rock fragments in the soil, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope, surface boulders	Severe: slope, surface boulders	Severe: snow damage, slope, rock fragments in the soil
298:					
Moses	Severe: slope, rock fragments in the soil, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope, surface boulders	Severe: slope, surface boulders	Severe: rock fragments in the soil, snow damage, slope
299:					
Narcisse	Moderate: soil wetness	Moderate: seepage	Slight	Slight	Moderate: snow damage
300:					
Narcisse	Moderate: soil wetness	Moderate: seepage	Slight	Slight	Slight
301:					
Nespelem	Moderate: depth to the hardpan	Moderate: depth to the hardpan	Slight	Slight	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
302:					
Nespelem	Moderate: depth to the hardpan, slope	Severe: slope, depth to the hardpan	Moderate: slope	Moderate: slope	Slight
Nespelem	Moderate: depth to the hardpan, slope	Severe: slope, depth to the hardpan	Moderate: slope	Moderate: slope	Slight
303:					
Nespelem	Moderate: depth to the hardpan	Moderate: depth to the hardpan	Slight	Slight	Slight
Emdent	Severe: soil wetness	Moderate: seepage	Severe: excess sodium and salts, soil wetness	Severe: soil wetness	Moderate: soil wetness
304:					
Nespelem	Moderate: depth to the hardpan	Moderate: slope, depth to the hardpan	Slight	Slight	Slight
Typic Xerorthents	Moderate: slope	Severe: excess salts, calcareous surface layer	Slight	Slight	Slight
305:					
Neuske	Slight	Moderate: slope	Slight	Slight	Moderate: snow damage
306:					
Neuske	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Moderate: slope, snow damage
307:					
Nevine	Moderate: slope	Moderate: slope, seepage	Moderate: slope	Slight	Moderate: snow damage
Nevine	Moderate: slope	Moderate: slope, seepage	Moderate: slope	Slight	Moderate: snow damage
308:					
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
309:					
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
310:					
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
310:					
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
Rock outcrop.					
311:					
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
Nevine	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
Rock outcrop.					
312:					
Newbell	Moderate: slope	Moderate: slope, seepage	Moderate: slope	Slight	Moderate: snow damage
313:					
Newbell	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
314:					
Newbell	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
315:					
Northstar	Moderate: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage
316:					
Northstar	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
317:					
Northstar	Moderate: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage
Johntom	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface stones	Severe: slope, surface stones	Severe: depth to bedrock, rock fragments in the soil, snow damage
Rock outcrop.					
318:					
Northstar	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
318:					
Johntom	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface stones	Severe: slope, surface stones	Severe: slope, depth to bedrock, rock fragments in the soil, snow damage
Rock outcrop.					
319:					
Northstar	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, snow damage, slope
Louiecreek	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, snow damage, slope
Rock outcrop.					
320:					
Northstar	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: rock fragments in the soil, snow damage, slope
Louiecreek	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: rock fragments in the soil, snow damage, slope
Rock outcrop.					
321:					
Northstar	Moderate: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage
Rock outcrop.					
322:					
Ohscow	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
323:					
Ohscow	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
324:					
Ohscow	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
325:					
Ohscow	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil
326:					
Okanogan	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Slight
327:					
Omak	Moderate: depth to the hardpan	Moderate: seepage, depth to the hardpan	Slight	Slight	Moderate: snow damage
328:					
Owhi	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: rock fragments in the soil
329:					
Owhi	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Moderate: slope, surface stones	Moderate: slope, surface stones	Moderate: rock fragments in the soil
330:					
Owhi	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: rock fragments in the soil
Haley	Moderate: ditchbanks cave		Slight	Slight	Slight
331:					
Oxerine	Moderate: depth to bedrock, rock fragments in the soil	Severe: seepage, slope, depth to bedrock	Slight	Slight	Moderate: snow damage, rock fragments in the soil
332:					
Oxerine	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
333:					
Oxerine	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
334:					
Oxerine	Moderate: slope, depth to bedrock, rock fragments in the soil	Severe: slope, seepage, depth to bedrock	Moderate: slope	Moderate: slope	Moderate: snow damage, rock fragments in the soil
Rock outcrop.					
335:					
Oxerine	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, seepage, depth to bedrock	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil
Rock outcrop.					
336:					
Parmenter	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage, rock fragments in the soil
337:					
Parmenter	Moderate: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Moderate: slope	Slight	Moderate: snow damage, rock fragments in the soil
338:					
Parmenter	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, rock fragments in the soil, snow damage
339:					
Parmenter	Moderate: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Moderate: surface boulders	Moderate: surface boulders	Moderate: snow damage, rock fragments in the soil
340:					
Peshastin	Moderate: rock fragments in the soil	Severe: seepage	Moderate: surface stones	Moderate: surface stones	Moderate: rock fragments in the soil
341:					
Peshastin	Moderate: slope, rock fragments in the soil	Severe: slope, seepage	Moderate: slope, surface stones	Moderate: slope, surface stones	Moderate: rock fragments in the soil
342:					
Peshastin	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope, surface boulders	Severe: slope, surface boulders	Severe: rock fragments in the soil, slope

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
343:					
Phoebe	Slight	Severe: seepage	Slight	Slight	Moderate: snow damage
344:					
Phoebe	Slight	Severe: seepage	Slight	Slight	Moderate: snow damage
345:					
Phoebe	Moderate: slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Moderate: snow damage
346:					
Phoebe	Severe: slope	Severe: seepage, slope	Severe: slope	Severe: slope	Severe: slope, snow damage
347:					
Phoebe	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
348:					
Phoebe	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: snow damage
349:					
Phoebe	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: snow damage
350:					
Phoebe	Moderate: slope, ditchbanks cave	Severe: seepage, slope	Moderate: slope	Moderate: slope	Moderate: snow damage
Dehart	Moderate: rock fragments in the soil, slope	Moderate: seepage, slope	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage
351:					
Picard	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Slight
352:					
Picard	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
353:					
Pits.					
354:					
Pogue	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Slight
355:					
Pogue	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
356:					
Pogue	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Moderate: slope	Moderate: slope	Slight
357:					
Pogue	Moderate: ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: rock fragments in the soil
358:					
Pogue	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Moderate: surface stones	Moderate: surface stones	Moderate: rock fragments in the soil
359:					
Pogue	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil
360:					
Poween	Moderate: soil wetness	Moderate: seepage	Moderate: calcareous surface layer	Slight	Slight
361:					
Quincy	Moderate to severe: ditchbanks cave, slope	Severe: seepage, slope	Severe: loose sandy droughty surface layer, slope	Moderate: slope	Moderate: loose sandy surface layer, slope
362:					
Quincy	Severe: ditchbanks cave, slope	Severe: seepage, slope	Severe: loose sandy droughty surface layer, slope	Severe: slope	Severe: loose sandy surface layer, slope
363:					
Quincy	Moderate: ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer
364:					
Quincy	Moderate: ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer
365:					
Quincy	Moderate: ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
366:					
Quincy	Moderate: ditchbanks cave, slope	Severe: seepage, slope	Severe: loose sandy droughty surface layer, slope	Moderate: slope	Moderate: loose sandy surface layer
367:					
Quincy	Moderate: ditchbanks cave	Severe: seepage, slope	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer
Aeneas	Moderate	Severe: seepage, slope	Slight	Slight	Slight
368:					
Raisio	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil
369:					
Raisio	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: slope, rock fragments in the soil
Rock outcrop.					
370:					
Raisio	Moderate: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage
Rufus	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: depth to bedrock, slope	Moderate: slope	Moderate: slope	Severe: depth to bedrock, rock fragments in the soil, snow damage
371:					
Raisio	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
Rufus	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock	Severe: slope	Severe: slope	Severe: depth to bedrock, slope, rock fragments in the soil, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
372:					
Raisio	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil
Rufus	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock	Severe: slope	Severe: slope	Severe: depth to bedrock, slope, rock fragments in the soil
373:					
Raisio	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil
Rufus	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: depth to bedrock, slope, rock fragments in the soil
Rock outcrop.					
374:					
Raisio	Moderate: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage
Rufus	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, droughty surface layer, slope	Moderate: slope	Severe: depth to bedrock, rock fragments in the soil, snow damage
375:					
Raisio	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, slope, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil
Rufus	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, slope, seepage	Severe: depth to bedrock, droughty surface layer, slope	Moderate: slope	Severe: depth to bedrock, slope, rock fragments in the soil
376:					
Ralsen	Moderate: soil wetness	Severe: seepage	Moderate: soil wetness	Moderate: soil wetness	Moderate: soil wetness, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
377:					
Ratlake	Severe: depth to the hardpan, soil wetness	Severe: depth to the hardpan, brackish water	Severe: excess sodium and salts, depth to the hardpan, soil wetness	Severe: soil wetness	Severe: depth to the hardpan, soil wetness
378:					
Reardan	Moderate: too clayey	Slight	Slight	Slight	Moderate: snow damage
379:					
Reardan	Moderate: high clay content	Moderate: slope	Slight	Slight	Moderate: snow damage
380:					
Rebecca	Slight	Severe: seepage	Slight	Slight	Slight
381:					
Rebecca	Slight	Severe: seepage, slope	Slight	Slight	Slight
382:					
Renha	Moderate: depth to bedrock	Severe: depth to bedrock, slope	Slight	Slight	Moderate: snow damage
383:					
Renha	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
384:					
Renha	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock	Severe: slope	Severe: slope	Moderate: slope, snow damage
Oxerine	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: slope, rock fragments in the soil, snow damage
385:					
Republic	Slight	Severe: slope, seepage	Slight	Slight	Moderate: snow damage
386:					
Republic	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: slope, snow damage
387:					
Republic	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
388:					
Resner	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Severe: snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
389:					
Resner	Severe: slope, ditchbanks cave	Severe: seepage, slope	Severe: slope	Slight	Severe: snow damage, slope
390:					
Ret	Severe: soil wetness, ditchbanks cave	Severe: seepage	Severe: soil wetness	Slight	Moderate: soil wetness, snow damage
391:					
Riverwash.					
392:					
Rock outcrop.					
393:					
Rock outcrop.					
Chumstick	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface boulders	Severe: slope, surface boulders	Severe: depth to bedrock, rock fragments in the soil, slope
394:					
Rock outcrop.					
Chumstick	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface boulders	Severe: slope, surface boulders	Severe: depth to bedrock, rock fragments in the soil, slope
395:					
Rock outcrop.					
Mineral	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, snow damage, rock fragments in the soil
396:					
Rock outcrop.					
Rufus	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: depth to bedrock, slope, rock fragments in the soil, snow damage
397:					
Rock outcrop.					
Soaplake	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Moderate: slope	Severe: depth to bedrock
398:					
Rock outcrop.					

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
398:					
Swakane	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, surface stones, rock fragments in the soil, slope	Severe: surface stones, slope	Severe: depth to bedrock, rock fragments in the soil
399:					
Rock outcrop.					
Vanbrunt	Severe: slope, rock fragments in the soil, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones and boulders	Severe: slope, surface stones and boulders	Severe: rock fragments in the soil, slope, snow damage
400:					
Roosevelt	Moderate: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Moderate: slope	Moderate: slope	Slight
Soaplake	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Moderate: slope	Severe: depth to bedrock
Rock outcrop.					
401:					
Roosevelt	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope
Soaplake	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: slope	Severe: depth to bedrock, slope
Rock outcrop.					
402:					
Rubble land.					
403:					
Rubble land.					
Rock outcrop.					
404:					
Rubble land.					
Rock outcrop.					
Haploxerolls	Severe: depth to bedrock in some areas, slope, rock fragments in the soil	Severe: slope, seepage, depth to bedrock in some areas	Severe: slope, surface cobbles, rock fragments in the soil	Severe: slope, surface cobbles	Severe: rock fragments in the soil, slope

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
405:					
Sacheen	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, loose sandy surface layer
406:					
Sacheen	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, loose sandy surface layer
407:					
Sacheen	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage, loose sandy surface layer
408:					
Sanpoil	Severe: soil wetness, ditchbanks cave	Severe: seepage	Severe: soil wetness	Severe: soil wetness	Moderate: soil wetness, snow damage
409:					
Sanpoil	Severe: seasonal ponding, soil wetness, ditchbanks cave	Severe: seepage	Severe: seasonal ponding, soil wetness	Severe: seasonal ponding, soil wetness	Severe: seasonal ponding, soil wetness, snow damage
410:					
Scala	Slight	Severe: seepage	Slight	Slight	Moderate: snow damage
411:					
Sclome	Moderate: soil wetness	Slight	Moderate: soil wetness	Severe: soil wetness	Moderate: soil wetness, snow damage
412:					
Scoap	Moderate: rock fragments in the soil	Moderate: slope, seepage	Slight	Slight	Moderate: snow damage, rock fragments in the soil
413:					
Scoap	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
414:					
Scoap	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil
415:					
Scoap	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
Rock outcrop.					

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
416:					
Scoap	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil
Rock outcrop.					
417:					
Scrabblers	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
418:					
Scrabblers	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
419:					
Scrabblers	Moderate: ditchbanks cave	Severe: slope, seepage	Slight	Slight	Moderate: snow damage
420:					
Scrabblers	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
421:					
Sitdown	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
422:					
Skaha	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: rock fragments in the soil, loose sandy surface layer
423:					
Skaha	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer, rock fragments in the soil	Slight	Moderate: rock fragments in the soil, loose sandy surface layer
424:					
Skaha	Severe: rock fragments in the soil, ditchbanks cave, slope	Severe: seepage, slope	Severe: loose sandy droughty surface layer, rock fragments in the soil, slope	Severe: slope	Severe: rock fragments in the soil, loose sandy surface layer, slope
425:					
Skaha	Severe: rock fragments in the soil, slope, ditchbanks cave	Severe: slope, seepage	Severe: surface stones, rock fragments in the soil, droughty surface layer, slope	Severe: surface stones, slope	Severe: rock fragments in the soil, loose sandy surface layer

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
426:					
Skaha	Severe: rock fragments in the soil, slope, ditchbanks cave	Severe: slope, seepage	Severe: surface stones, rock fragments in the soil, droughty surface layer, slope	Severe: surface stones, slope	Severe: rock fragments in the soil, loose sandy surface layer, slope
427:					
Skaha	Severe: rock fragments in the soil, slope, ditchbanks cave	Severe: slope, seepage	Severe: surface stones, rock fragments in the soil, droughty surface layer, slope	Severe: surface stones, slope	Severe: rock fragments in the soil, loose sandy surface layer, slope
Rock outcrop.					
428:					
Skanid	Severe: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage, slope	Slight	Slight	Severe: depth to bedrock, rock fragments in the soil, snow damage
429:					
Skanid	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: depth to bedrock, rock fragments in the soil, slope
430:					
Skanid	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: depth to bedrock, rock fragments in the soil, snow damage, slope
431:					
Skanid	Severe: depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage, slope	Slight	Slight	Severe: depth to bedrock, rock fragments in the soil, snow damage
432:					
Skanid	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: depth to bedrock, rock fragments in the soil, snow damage, slope
433:					
Skanid	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: depth to bedrock, rock fragments in the soil, snow damage, slope

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
434:					
Skanid	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: depth to bedrock, rock fragments in the soil, slope
Rock outcrop.					
435:					
Skanid	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: depth to bedrock, rock fragments in the soil, slope, snow damage
Rock outcrop.					
436:					
Skanid	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: depth to bedrock, rock fragments in the soil, slope, snow damage
Rock outcrop.					
437:					
Spens	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope, surface stones, droughty surface layer	Severe: slope, surface stones	Severe: rock fragments in the soil, loose sandy surface layer, slope, snow damage
438:					
Spens	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope, surface stones, droughty surface layer	Severe: slope, surface stones	Severe: rock fragments in the soil, loose sandy surface layer, slope, snow damage
439:					
Spokane	Moderate: depth to bedrock	Severe: slope, depth to bedrock, seepage	Slight	Slight	Moderate: snow damage
440:					
Spokane	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope
441:					
Spokane	Severe: slope, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
442:					
Spokane	Severe: slope, depth to bedrock, ditchbanks cave	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: snow damage, slope

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
443:					
Spokane	Severe: slope, depth to bedrock, ditchbanks cave	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
444:					
Spokane	Moderate: depth to bedrock	Severe: depth to bedrock, seepage, slope	Slight	Slight	Moderate: snow damage
Rock outcrop.					
445:					
Spokane	Severe: slope, depth to bedrock	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Moderate: snow damage, slope
Rock outcrop.					
446:					
Spokane	Moderate: depth to bedrock, ditchbanks cave	Severe: depth to bedrock, seepage, slope	Slight	Slight	Moderate: snow damage
Skanid	Severe: depth to bedrock	Severe: depth to bedrock, seepage, slope	Slight	Slight	Severe: depth to bedrock, snow damage
447:					
Spokane	Severe: slope, depth to bedrock, ditchbanks cave	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Moderate: snow damage, slope
Skanid	Severe: depth to bedrock, slope	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: depth to bedrock, snow damage, slope
448:					
Spokane	Severe: slope, depth to bedrock, ditchbanks cave	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: slope, snow damage
Skanid	Severe: depth to bedrock, slope	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: depth to bedrock, snow damage, slope
449:					
Springdale	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: rock fragments in the soil, snow damage
450:					
Springdale	Moderate: rock fragments in the soil, ditchbanks cave, slope	Severe: seepage, slope	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, slope, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
451:					
Springdale	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
452:					
Stapaloop	Moderate: ditchbanks cave	Severe: slope, seepage	Slight	Slight	Moderate: snow damage
453:					
Stapaloop	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage
454:					
Stapaloop	Moderate: ditchbanks cave	Severe: slope, seepage	Slight	Slight	Moderate: snow damage
455:					
Stepstone	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
456:					
Stepstone	Severe: ditchbanks cave, slope	Severe: seepage, slope	Severe: slope	Severe: slope	Moderate: snow damage, slope
457:					
Stepstone	Severe: ditchbanks cave, slope	Severe: seepage, slope	Severe: slope	Severe: slope	Severe: snow damage, slope
458:					
Stepstone	Moderate: ditchbanks cave, rock fragments in the soil, slope	Severe: seepage, slope	Severe: slope	Severe: slope	Moderate: snow damage, rock fragments in the soil, slope
459:					
Stevens	Slight	Moderate: seepage	Slight	Slight	Moderate: snow damage
460:					
Stevens	Slight	Moderate: seepage, slope	Slight	Slight	Moderate: snow damage
461:					
Stevens	Moderate: slope	Severe: slope, seepage	Moderate: slope	Moderate: slope	Moderate: slope, snow damage
462:					
Stevens	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
463:					
Strat	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Moderate: rock fragments in the soil	Slight	Moderate: rock fragments in the soil

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
464:					
Stubblefield----	Moderate: depth to the hardpan, rock fragments in the soil	Severe: depth to the hardpan, slope, seepage	Moderate: surface stones, rock fragments in the soil, slope	Moderate: surface stones, slope	Moderate: rock fragments in the soil
465:					
Swakane---------	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface cobbles, rock fragments in the soil	Severe: slope, surface cobbles	Severe: depth to bedrock, slope, rock fragments in the soil
466:					
Swakane---------	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, surface stones, rock fragments in the soil, slope	Severe: surface stones, slope	Severe: depth to bedrock, rock fragments in the soil
Rock outcrop.					
467:					
Swakane---------	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope, surface stones, rock fragments in the soil	Severe: slope, surface stones	Severe: depth to bedrock, slope, rock fragments in the soil
Rock outcrop.					
468:					
Swipkin---------	Slight	Slight	Slight	Slight	Moderate: snow damage
469:					
Swipkin---------	Slight	Slight	Slight	Slight	Moderate: snow damage
470:					
Thout----------	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
471:					
Thout----------	Moderate: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, seepage, slope	Slight	Slight	Moderate: snow damage, rock fragments in the soil
Rock outcrop.					

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
472:					
Thout	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, slope, snow damage
Rock outcrop.					
473:					
Thout	Severe: slope, depth to bedrock, rock fragments in the soil	Severe: depth to bedrock, seepage, slope	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
Rock outcrop.					
474:					
Timentwa	Slight	Moderate: depth to the hardpan, seepage	Slight	Slight	Slight
475:					
Timentwa	Slight	Moderate: slope, depth to the hardpan, seepage	Slight	Slight	Slight
476:					
Timentwa	Moderate: surface boulders, slope	Severe: slope, depth to the hardpan, seepage	Severe: surface boulders, slope	Severe: surface boulders, slope	Moderate: surface boulders
477:					
Timentwa	Severe: slope	Severe: slope, depth to the hardpan, seepage	Severe: slope	Severe: slope	Severe: slope
Timentwa	Severe: slope	Severe: slope, depth to the hardpan, seepage	Severe: slope	Severe: slope	Severe: slope
478:					
Timentwa	Severe: slope, surface boulders	Severe: slope, depth to the hardpan, seepage	Severe: slope, surface boulders	Severe: slope, surface boulders	Severe: slope, surface boulders
Timentwa	Severe: slope, surface boulders	Severe: slope, depth to the hardpan, seepage	Severe: slope, surface boulders	Severe: slope, surface boulders	Severe: slope, surface boulders
479:					
Timentwa	Moderate: slope	Severe: slope, depth to the hardpan, seepage	Moderate: slope	Slight	Slight

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
479:					
Bakeoven	Severe: depth to bedrock, rock fragments in the soil, slope	Severe: depth to bedrock, slope	Severe: depth to bedrock, surface cobbles, rock fragments in the soil, slope	Severe: surface cobbles, slope	Severe: depth to bedrock, rock fragments in the soil
Rock outcrop.					
480:					
Togo	Moderate: slope	Severe: slope, seepage	Moderate: slope	Slight	Severe: snow damage
481:					
Togo	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
482:					
Togo	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
483:					
Togo	Severe: slope	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: snow damage, slope
484:					
Togo	Moderate: slope, rock fragments in the soil	Severe: slope, seepage	Moderate: slope	Moderate: slope	Severe: snow damage, rock fragments in the soil
Rock outcrop.					
485:					
Torboy	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Moderate: snow damage
486:					
Torboy	Severe: slope, ditchbanks cave	Severe: seepage, slope	Severe: slope	Severe: slope	Moderate: slope, snow damage
487:					
Torrifluventic Haploxerolls	Moderate: ditchbanks cave, rock fragments in the soil in some areas	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer, rock fragments in the soil in some areas
488:					
Tunkcreek	Moderate: ditchbanks cave	Severe: seepage, slope	Slight	Slight	Severe: snow damage
489:					
Tunkcreek	Moderate: ditchbanks cave	Severe: seepage, slope	Severe: slope	Severe: slope	Severe: snow damage
490:					
Tyee	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Moderate: slope	Severe: depth to bedrock

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
491:					
Tyee	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: slope	Severe: depth to bedrock, slope
492:					
Tyee	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: slope	Severe: depth to bedrock, slope
493:					
Tyee	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: slope	Severe: depth to bedrock, slope
Morical	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: slope	Severe: slope	Severe: slope
Tyee	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: slope	Severe: depth to bedrock, slope
494:					
Tyee	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Moderate: slope	Severe: depth to bedrock, slope
Rock outcrop.					
495:					
Tyee	Severe: depth to bedrock, slope	Severe: slope, depth to bedrock, seepage	Severe: depth to bedrock, slope	Severe: slope	Severe: depth to bedrock, slope
Rock outcrop.					
496:					
Typic Haplaquolls	Severe: soil wetness, ditchbanks cave	Severe: seepage, ditchbanks cave	Severe: soil wetness	Severe: soil wetness	Moderate: soil wetness
497:					
Typic Xerorthents	Severe: landslide potential, slope, rock fragments in the soil in some areas	Severe: landslide potential, slope	Severe: slope	Severe: slope	Moderate to severe: landslide potential, snow damage, slope, rock fragments in the soil in some areas
Typic Xerochrepts	Severe: landslide potential, slope, rock fragments in the soil in some areas	Severe: landslide potential, slope	Severe: slope	Severe: slope	Moderate to severe: landslide potential, snow damage, slope, rock fragments in the soil in some areas

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
498: Ultic Haploxerolls	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage
499: Uncas	Severe: soil wetness, flooding hazard	Moderate: seepage	Severe: soil wetness, flooding hazard	Severe: soil wetness, flooding hazard	Moderate: soil wetness, flooding hazard, snow damage
500: Vanbrunt	Severe: rock fragments in the soil, depth to bedrock	Severe: slope, depth to bedrock, seepage	Severe: surface stones and boulders	Severe: surface stones and boulders	Moderate: rock fragments in the soil, snow damage
Rock outcrop.					
501: Vanbrunt	Severe: slope, rock fragments in the soil, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: surface stones, slope	Severe: surface stones, slope	Severe: rock fragments in the soil, snow damage, slope
Rock outcrop.					
502: Vanbrunt	Severe: slope, rock fragments in the soil, depth to bedrock	Severe: slope, seepage, depth to bedrock	Severe: slope, surface stones and boulders	Severe: slope, surface stones and boulders	Severe: rock fragments in the soil, slope, snow damage
Rock outcrop.					
503: Wannacott	Slight	Moderate: seepage	Slight	Slight	Slight
504: Wannacott	Slight	Moderate: seepage, slope	Slight	Slight	Slight
505: Wapal	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: rock fragments in the soil, snow damage
506: Wapal	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: rock fragments in the soil, snow damage
507: Wapal	Moderate: rock fragments in the soil, slope, ditchbanks cave	Severe: seepage, slope	Moderate: slope	Moderate: slope	Moderate: rock fragments in the soil, snow damage, slope

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
508:					
Wapal	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
509:					
Wellscreek	Moderate: rock fragments in the soil	Moderate: seepage, slope	Slight	Slight	Moderate: rock fragments in the soil, snow damage
510:					
Wellscreek	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, slope, snow damage
511:					
Wellscreek	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, rock fragments in the soil, snow damage
512:					
Whitestone	Moderate: rock fragments in the soil	Severe: seepage, slope	Slight	Slight	Moderate: rock fragments in the soil, snow damage
513:					
Whitestone	Moderate: rock fragments in the soil, slope	Severe: seepage, slope	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, snow damage, slope
514:					
Whitestone	Severe: rock fragments in the soil, slope	Severe: seepage, slope	Severe: slope	Severe: slope	Severe: rock fragments in the soil, snow damage, slope
515:					
Whitestone	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: rock fragments in the soil, snow damage, slope
516:					
Whitestone	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: rock fragments in the soil, snow damage, slope
Rock outcrop.					

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
517:					
Wilmont	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
518:					
Wilmont	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil
519:					
Wilmont	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Moderate: slope, snow damage, rock fragments in the soil
520:					
Wilmont	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope	Severe: slope	Severe: slope, snow damage, rock fragments in the soil
521:					
Winchester	Moderate: ditchbanks cave	Severe: seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer
522:					
Winchester	Moderate: slope, ditchbanks cave	Severe: slope, seepage	Severe: loose sandy droughty surface layer, slope	Moderate: slope	Moderate: loose sandy surface layer
523:					
Winchester	Severe: slope, ditchbanks cave	Severe: slope, seepage	Severe: slope, loose sandy droughty surface layer	Severe: slope	Severe: slope, loose sandy surface layer
524:					
Winchester	Moderate: ditchbanks cave	Severe: slope, seepage	Severe: loose sandy droughty surface layer	Slight	Moderate: loose sandy surface layer
Rock outcrop.					
525:					
Winthrop	Moderate: rock fragments in the soil, ditchbanks cave	Severe: seepage, slope	Moderate: surface stones, droughty surface layer	Moderate: surface stones	Moderate: rock fragments in the soil, snow damage

Table 6.--Grazing Management Development Limitations--Continued

Soil name and map symbol	Pipelines	Ponds	Seeding	Brush management	Fences
526:					
Wynhoff	Moderate: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Moderate: slope, surface stones	Moderate: slope, surface stones	Moderate: rock fragments in the soil
527:					
Wynhoff	Severe: depth to bedrock, slope, rock fragments in the soil	Severe: slope, depth to bedrock, seepage	Severe: slope, surface stones	Severe: slope, surface stones	Severe: slope, rock fragments in the soil
528:					
Xeric Torriorthents	Severe: rock fragments in the soil, ditchbanks cave	Severe: seepage	Slight	Slight	Moderate: rock fragments in the soil
529:					
Xeric Torriorthents	Severe: slope, rock fragments in the soil, ditchbanks cave	Severe: slope, seepage	Severe: slope, loose sandy droughty surface layer, surface cobbles	Severe: slope, surface cobbles	Severe: rock fragments in the soil, slope, loose sandy surface layer
530:					
Xerochrepts	Severe: slope, rock fragments in the soil	Severe: slope, seepage	Severe: slope, surface cobbles	Severe: slope, surface stones	Severe: rock fragments in the soil, slope, snow damage
Rubble land.					
Rock outcrop.					
531:					
Water.					
532:					
Dam.					

Table 7.--Ecological Site Productivity and Characteristic Plant Communities

(Forest understory and range site composition is based on percent weight.)

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
1:						
Achimin	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
2:						
Achimin	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
Calcic Pachic Haploxerolls	SEMIWET MEADOW 9-15 PZ	Favorable	5,000	Baltic rush		5
		Normal	4,000	Nebraska sedge		10
		Unfavorable	3,000	Sandberg bluegrass		5
				Bearded wheatgrass		5
				Bluejoint		5
				Common cowparsnip		5
				Iris		5
				Mannagrass		5
				Meadow barley		5
				Mint		5
				Northern reedgrass		15
				Tufted hairgrass		20
3:						
Aeneas	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
4:						
Aeneas	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
5:						
Ahtanum	WET ALKALI MEADOW 9-15 PZ	Favorable	4,000	Baltic rush		5
		Normal	3,000	Nuttall's alkaligrass		10
		Unfavorable	2,500	Sandberg bluegrass		15
				Basin wildrye		5
				Black greasewood		2
				Cinquefoil		5
				Clustered field sedge		5
				Inland saltgrass		25
				Meadow barley		5
				Other perennial grasslikes		5
				Sedge		2
				Tufted hairgrass		5
6:						
Aits	ABGR/LIBO2	Favorable	---	American trailplant	5	
		Normal	---	Colombian brome	6	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	9	
				Bride's bonnet	5	
				Creambush oceanspray	5	
				Darkwoods violet	5	
				Longtube twinflower	15	
				Low Oregongrape	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prince's pine	5	
				Starry false Solomon's seal	5	
				Sweetscented bedstraw	5	
				Western rattlesnake plantain	5	
7:						
Aits	ABGR/LIBO2	Favorable	---	American trailplant	5	
		Normal	---	Colombian brome	6	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	9	
				Bride's bonnet	5	
				Creambush oceanspray	5	
				Darkwoods violet	5	
				Longtube twinflower	15	
				Low Oregongrape	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prince's pine	5	
				Starry false Solomon's seal	5	
				Sweetscented bedstraw	5	
				Western rattlesnake plantain	5	
8:						
Aits	ABGR/LIBO2	Favorable	---	American trailplant	5	
		Normal	---	Colombian brome	6	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	9	
				Bride's bonnet	5	
				Creambush oceanspray	5	
				Darkwoods violet	5	
				Longtube twinflower	15	
				Low Oregongrape	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prince's pine	5	
				Starry false Solomon's seal	5	
				Sweetscented bedstraw	5	
				Western rattlesnake plantain	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
9:						
Anders	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
10:						
Andic Cryaquepts	ABLA2/GYDR	Favorable	---	Utah honeysuckle	5	
		Normal	---	Bride's bonnet	5	
		Unfavorable	---	Bunchberry dogwood	15	
				Grouse blueberry	10	
				Longtube twinflower	16	
				Myrtle pachystima	8	
				Oneleaf foamflower	5	
				Other perennial forbs	5	
				Other perennial grasses	5	
				Other shrubs	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetscented bedstraw	5	
				White spirea	2	
11:						
Annum	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
12:						
Annum	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
13:						
Annum	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
13:						
Annum	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
14:						
Apex	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	15	
				Low Oregongrape	5	
				Mallow ninebark	15	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
15:						
Apex	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	15	
				Low Oregongrape	5	
				Mallow ninebark	15	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
16:						
Apex	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	15	
				Low Oregongrape	5	
				Mallow ninebark	15	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
17:						
Apex	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	15	
				Low Oregongrape	5	
				Mallow ninebark	15	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
18:						
Apex	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	15	
				Low Oregongrape	5	
				Mallow ninebark	15	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
19:						
Apex	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	15	
				Low Oregongrape	5	
				Mallow ninebark	15	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
20:						
Aquic Xerofluvents	PSME/SYAL,WET	Favorable	---	Dewey sedge	1	
		Normal	---	Woods' rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	40	
				Field horsetail	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Redosier dogwood	6	
				Reed canarygrass	1	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Thimbleberry	10	
21:						
Aquic Xerofluvents	THPL/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Bride's bonnet	5	
				Bunchberry dogwood	5	
				Grand fir	5	
				Longtube twinflower	20	
				Low Oregongrape	5	
				Myrtle pachystima	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				Western redcedar	10	
22:						
Aquic Xerofluvents	PIPO/SYAL,WET	Favorable	---	Dewey sedge	1	
		Normal	---	Woods' rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	40	
				Field horsetail	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Redosier dogwood	6	
				Reed canarygrass	1	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Thimbleberry	10	
23:						
Badge	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
24:						
Badge	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
Rubble land.						
25:						
Badland.						
26:						
Bakeoven	VERY SHALLOW 9-15 PZ	Favorable	250	Hood's phlox		5
		Normal	200	Hooker's balsamroot		5
		Unfavorable	150	Sandberg bluegrass		30
				Bitterroot		2
				Bluebunch wheatgrass		5
				Bottlebrush squirreltail		5
				Narrowleaf goldenweed		5
				Rock buckwheat		5
				Stiff sagebrush		20
				Thymeleaf buckwheat		10
27:						
Bakeoven	VERY SHALLOW 9-15 PZ	Favorable	250	Hood's phlox		5
		Normal	200	Hooker's balsamroot		5
		Unfavorable	150	Sandberg bluegrass		30
				Bitterroot		2
				Bluebunch wheatgrass		5
				Bottlebrush squirreltail		5
				Narrowleaf goldenweed		5
				Rock buckwheat		5
				Stiff sagebrush		20
				Thymeleaf buckwheat		10
Olical	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
28:						
Bakeoven	VERY SHALLOW 9-15 PZ	Favorable	250	Hood's phlox		5
		Normal	200	Hooker's balsamroot		5
		Unfavorable	150	Sandberg bluegrass		30
				Bitterroot		2
				Bluebunch wheatgrass		5
				Bottlebrush squirreltail		5
				Narrowleaf goldenweed		5
				Rock buckwheat		5
				Stiff sagebrush		20
				Thymeleaf buckwheat		10

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
28:						
Timentwa--------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Rock outcrop.						
29:						
Baldknob--------	DRY STONY 15+ PZ	Favorable	600	Cusick's bluegrass		5
		Normal	400	Idaho fescue		60
		Unfavorable	200	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Thout----------	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	6	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Bush penstemon	5	
				Common chokecherry	6	
				Common gailardia	5	
				Common snowberry	25	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Narrowleaf mountaintrumpet	5	
				Pinegrass	6	
				Silky lupine	6	
				White hawkweed	5	
Rock outcrop.						
30:						
Baldknob--------	DRY STONY 15+ PZ	Favorable	600	Cusick's bluegrass		5
		Normal	400	Idaho fescue		60
		Unfavorable	200	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Thout----------	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	6	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Bush penstemon	5	
				Common chokecherry	6	
				Common gailardia	5	
				Common snowberry	25	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Narrowleaf mountaintrumpet	5	
				Pinegrass	6	
				Silky lupine	6	
				White hawkweed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
30:						
Rock outcrop.						
31:						
Barnellcreek----	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	8	
		Unfavorable	---	Common snowberry	25	
				Common yarrow	5	
				Feather Solomon's seal	5	
				Houndstongue hawkweed	5	
				Pinegrass	6	
				Showy aster	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				White spirea	6	
				Woodland strawberry	5	
32:						
Bearspring------	PSME/PHMA,ARCO	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	5	
				Common snowberry	10	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
33:						
Bearspring------	PSME/PHMA,ARCO	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	5	
				Common snowberry	10	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
34:						
Bernhill--------	PSME/SYAL	Favorable	---	Douglas' hawthorn	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
35:						
Bernhill--------	PSME/SYAL	Favorable	---	Douglas' hawthorn	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
36:						
Beverly---------	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
37:						
Bisbee----------	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
38:						
Bisbee----------	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	
39:						
Boesel----------	PSME/SYAL,WET	Favorable	---	Saskatoon serviceberry	1	
		Normal	---	Woods' rose	10	
		Unfavorable	---	Black hawthorn	5	
				Blue wildrye	5	
				Common snowberry	55	
				Field horsetail	3	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	2	
				Redosier dogwood	5	
				Starry false Solomon's seal	2	
				Sweetcicely	1	
				Sweetscented bedstraw	5	
				Tall Oregongrape	1	
40:						
Bong----------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Antelope bitterbrush	20	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	20	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	6	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	
41:						
Bong----------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Antelope bitterbrush	20	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	20	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	6	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
42:						
Bong	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Saskatoon serviceberry	5	
				Bluebunch wheatgrass	1	
				Common snowberry	50	
				Common yarrow	1	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	15	
				Silky lupine	5	
43:						
Borgeau	MOIST UPLAND 15+ PZ	Favorable	1,150	Idaho fescue	7	
		Normal	1,000	Nuttal's larkspur	5	
		Unfavorable	850	Sandberg bluegrass	5	
				Woods' rose	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	8	
				Bluebunch wheatgrass	25	
				Common chokecherry	5	
				Common snowberry	5	
				Common yarrow	5	
				Fernleaf biscuitroot	5	
				Longleaf hawksbeard	5	
				Nineleaf biscuitroot	5	
				Ponderosa pine	5	
				Silky lupine	5	
44:						
Borgeau	MOIST UPLAND 15+ PZ	Favorable	1,150	Idaho fescue	7	
		Normal	1,000	Nuttal's larkspur	5	
		Unfavorable	850	Sandberg bluegrass	5	
				Woods' rose	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	8	
				Bluebunch wheatgrass	25	
				Common chokecherry	5	
				Common snowberry	5	
				Common yarrow	5	
				Fernleaf biscuitroot	5	
				Longleaf hawksbeard	5	
				Nineleaf biscuitroot	5	
				Ponderosa pine	5	
				Silky lupine	5	
45:						
Borgeau	MOIST UPLAND 15+ PZ	Favorable	1,150	Idaho fescue	7	
		Normal	1,000	Nuttal's larkspur	5	
		Unfavorable	850	Sandberg bluegrass	5	
				Woods' rose	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	8	
				Bluebunch wheatgrass	25	
				Common chokecherry	5	
				Common snowberry	5	
				Common yarrow	5	
				Fernleaf biscuitroot	5	
				Longleaf hawksbeard	5	
				Nineleaf biscuitroot	5	
				Ponderosa pine	5	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
45:						
Rock outcrop.						
46:						
Borosaprists----	EMERGENT WETLAND/SEMI-PERMANENTLY FLOODED	Favorable	4,000	Bebb's sedge		20
		Normal	4,000	Beaked sedge		30
		Unfavorable	4,000	Bog alkaligrass		5
				Broadleaf cattail		5
				Hardstem bulrush		20
				Panicled bulrush		15
				Willow		5
47:						
Bossburg--------	DECIDUOUS	Favorable	---	Hood's sedge	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	30	
				Field horsetail	5	
				Northern bedstraw	5	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	5	
				Redosier dogwood	5	
				Rose	15	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Woollyfruit sedge	5	
48:						
Broadax---------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
49:						
Broadax---------	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
50:						
Brusher	ABGR/LIBO2	Favorable	---	Rocky Mountain maple	8	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	10	
				Bride's bonnet	5	
				Common snowberry	10	
				Creambush oceanspray	5	
				Longtube twinflower	5	
				Mallow ninebark	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
51:						
Brusher	ABGR/LIBO2	Favorable	---	Rocky Mountain maple	8	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	10	
				Bride's bonnet	5	
				Common snowberry	10	
				Creambush oceanspray	5	
				Longtube twinflower	5	
				Mallow ninebark	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
52:						
Brusher	PSME/PHMA	Favorable	---	Scouler's willow	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Common snowberry	7	
				Creambush oceanspray	25	
				Mallow ninebark	10	
				Myrtle pachystima	6	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sweetcicely	5	
				White hawkweed	5	
53:						
Brusher	PSME/PHMA	Favorable	---	Scouler's willow	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Common snowberry	7	
				Creambush oceanspray	25	
				Mallow ninebark	10	
				Myrtle pachystima	6	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sweetcicely	5	
				White hawkweed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
54:						
Buhrig----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
55:						
Buhrig----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
56:						
Buhrig----------	ABLA2/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	10	
		Unfavorable	---	Baldhip rose	10	
				Blue huckleberry	12	
				Bride's bonnet	5	
				Longtube twinflower	10	
				Myrtle pachystima	8	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sticky currant	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
57:						
Buhrig----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
Rock outcrop.						
58:						
Buhrig----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
Rock outcrop.						
59:						
Canteen----------	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	2	
				Bride's bonnet	2	
				Creambush oceanspray	20	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Mallow ninebark	25	
				Myrtle pachystima	8	
				Pinegrass	5	
				Sidebells shinleaf	1	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
60:						
Canteen	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	2	
				Bride's bonnet	2	
				Creambush oceanspray	20	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Mallow ninebark	25	
				Myrtle pachystima	8	
				Pinegrass	5	
				Sidebells shinleaf	1	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
61:						
Canteen	ABGR/LIBO2	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	8	
		Unfavorable	---	Blue huckleberry	6	
				Bride's bonnet	5	
				Creambush oceanspray	7	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Mallow ninebark	9	
				Myrtle pachystima	20	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
62:						
Canteen	ABGR/LIBO2	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	8	
		Unfavorable	---	Blue huckleberry	6	
				Bride's bonnet	5	
				Creambush oceanspray	7	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Mallow ninebark	9	
				Myrtle pachystima	20	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
63:						
Capoose	PSME/PHMA,PAMY	Favorable	---	Holboell's rockcress	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Scouler's willow	5	
				Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	10	
				Largeflower triteleia	5	
				Mallow ninebark	25	
				Myrtle pachystima	5	
				Northwestern sedge	5	
				Pinegrass	5	
				Raceme pussytoes	5	
				Roundleaf alumroot	5	
				Western rattlesnake plantain	5	
				White spirea	5	
64:						
Capoose	PSME/PHMA,PAMY	Favorable	---	Holboell's rockcress	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Scouler's willow	5	
				Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	10	
				Largeflower triteleia	5	
				Mallow ninebark	25	
				Myrtle pachystima	5	
				Northwestern sedge	5	
				Pinegrass	5	
				Raceme pussytoes	5	
				Roundleaf alumroot	5	
				Western rattlesnake plantain	5	
				White spirea	5	
65:						
Capoose	PSME/PHMA,PAMY	Favorable	---	Holboell's rockcress	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Scouler's willow	5	
				Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	10	
				Largeflower triteleia	5	
				Mallow ninebark	25	
				Myrtle pachystima	5	
				Northwestern sedge	5	
				Pinegrass	5	
				Raceme pussytoes	5	
				Roundleaf alumroot	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
66:						
Capoose---------	PSME/PHMA,PAMY	Favorable	---	Holboell's rockcress	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Scouler's willow	5	
				Baldhip rose	5	
				Common snowberry	5	
				Creambush oceanspray	10	
				Largeflower triteleia	5	
				Mallow ninebark	25	
				Myrtle pachystima	5	
				Northwestern sedge	5	
				Pinegrass	5	
				Raceme pussytoes	5	
				Roundleaf alumroot	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Rock outcrop.						
67:						
Cashmere---------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
68:						
Cashmere---------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
69:						
Cashmere---------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
70:						
Cashmere	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
71:						
Cashmont	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
72:						
Cashmont	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
73:						
Cedonia	PSME/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	7	
				Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Meadow deathcamas	5	
				Pinegrass	7	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Tall Oregongrape	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
74:						
Cedonia	PSME/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	7	
				Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Meadow deathcamas	5	
				Pinegrass	7	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Tall Oregongrape	5	
				White spirea	5	
75:						
Cedonia	PSME/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	7	
				Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Meadow deathcamas	5	
				Pinegrass	7	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Tall Oregongrape	5	
				White spirea	5	
76:						
Cedonia	PSME/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	7	
				Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Meadow deathcamas	5	
				Pinegrass	7	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Tall Oregongrape	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
77:						
Centralpeak-----	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
Centralpeak-----	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
78:						
Centralpeak-----	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
Centralpeak-----	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
79:						
Centralpeak-----	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
Centralpeak-----	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
80:						
Centralpeak-----	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
81:						
Centralpeak-----	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
82:						
Centralpeak-----	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
83:						
Centralpeak-----	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
Brusher---------	ABGR/LIBO2	Favorable	---	Rocky Mountain maple	8	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	10	
				Bride's bonnet	5	
				Common snowberry	10	
				Creambush oceanspray	5	
				Longtube twinflower	5	
				Mallow ninebark	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
84:						
Centralpeak-----	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
84:						
Centralpeak-----	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	6	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
Rock outcrop.						
85:						
Chumstick-------	PSME/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Bluebunch wheatgrass	20	
				Common yarrow	5	
				Myrtle pachystima	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	7	
				Sulphur wildbuckwheat	1	
				Tufted phlox	10	
				White spirea	10	
Rock outcrop.						
86:						
Chumstick-------	PSME/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Bluebunch wheatgrass	20	
				Common yarrow	5	
				Myrtle pachystima	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	7	
				Sulphur wildbuckwheat	1	
				Tufted phlox	10	
				White spirea	10	
Rock outcrop.						
87:						
Codylake--------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Darkwoods violet	5	
				Fireweed	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
88:						
Codylake	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Darkwoods violet	5	
				Fireweed	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
89:						
Codylake	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Darkwoods violet	5	
				Fireweed	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
90:						
Colockum	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
91:						
Colockum	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
92:						
Colockum	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
93:						
Conconully	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
94:						
Conconully	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
95:						
Conconully	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
96:						
Conconully------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
97:						
Conconully------	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
98:						
Conconully------	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
99:						
Conconully------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Bakeoven--------	VERY SHALLOW 9-15 PZ	Favorable	250	Hood's phlox		5
		Normal	200	Hooker's balsamroot		5
		Unfavorable	150	Sandberg bluegrass		30
				Bitterroot		2
				Bluebunch wheatgrass		5
				Bottlebrush squirreltail		5
				Narrowleaf goldenweed		5
				Rock buckwheat		5
				Stiff sagebrush		20
				Thymeleaf buckwheat		10
100:						
Conconully------	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
101:						
Conconully	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Rock outcrop.						
102:						
Conconully	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Swakane	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
Rock outcrop.						
103:						
Couleedam	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
Rock outcrop.						
104:						
Coxlake	PSME/SYAL,WET	Favorable	---	American red raspberry	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Woods' rose	5	
				Blue wildrye	5	
				Common chokecherry	1	
				Common snowberry	50	
				Northern bedstraw	5	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other perennial grasses	1	
				Other shrubs	1	
				Redosier dogwood	5	
				Sweetcicely	5	
				Thimbleberry	10	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
105:						
Cryofluvents	ABLA2/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Bride's bonnet	5	
				Bunchberry dogwood	10	
				Darkwoods violet	5	
				Longtube twinflower	20	
				Myrtle pachystima	5	
				Oneleaf foamflower	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetscented bedstraw	5	
				Thimbleberry	5	
106:						
Cubcreek	PSME/SYAL,WET	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	50	
				Field horsetail	1	
				Largeleaf sandwort	1	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	5	
				Prickly currant	5	
				Redosier dogwood	5	
				Rose	5	
				Tall Oregongrape	5	
107:						
Cumulic Haploxerolls	SEMIWET MEADOW 9-15 PZ	Favorable	5,000	Baltic rush		5
		Normal	4,000	Nebraska sedge		10
		Unfavorable	3,000	Sandberg bluegrass		5
				Bearded wheatgrass		5
				Bluejoint		5
				Common cowparsnip		5
				Iris		5
				Mannagrass		5
				Meadow barley		5
				Mint		5
				Northern reedgrass		15
				Tufted hairgrass		20

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
108:						
Dart	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	5	
		Normal	---	Sandberg bluegrass	5	
		Unfavorable	---	Antelope bitterbrush	40	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	15	
				Common chokecherry	1	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	2	
				Silky lupine	5	
109:						
Dart	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	5	
		Normal	---	Sandberg bluegrass	5	
		Unfavorable	---	Antelope bitterbrush	40	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	15	
				Common chokecherry	1	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	2	
				Silky lupine	5	
110:						
Dart	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	5	
		Normal	---	Sandberg bluegrass	5	
		Unfavorable	---	Antelope bitterbrush	40	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	15	
				Common chokecherry	1	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	2	
				Silky lupine	5	
Springdale	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	8	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Prairie Junegrass	5	
				Silky lupine	6	
				White spirea	6	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
111:						
Dart	PIPO/FEID	Favorable	---	Idaho fescue	5	
		Normal	---	Sandberg bluegrass	5	
		Unfavorable	---	Antelope bitterbrush	40	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	15	
				Common chokecherry	1	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	2	
				Silky lupine	5	
Springdale	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	8	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Prairie Junegrass	5	
				Silky lupine	6	
				White spirea	6	
				White stoneseed	5	
112:						
Dehart	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	
113:						
Dehart	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
114:						
Dehart----------	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	
Phoebe----------	PIPO/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Arrowleaf balsamroot	7	
				Bluebunch wheatgrass	20	
				Common chokecherry	3	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Rose	5	
				Silky lupine	5	
				White stoneseed	5	
115:						
Dehart----------	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	
Rock outcrop.						
116:						
Dehart----------	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
116:						
Rock outcrop.						
117:						
Dinkelman-------	PSME/SYAL	Favorable	---	Arrowleaf balsamroot	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Bluebunch wheatgrass	5	
				Common snowberry	40	
				Creambush oceanspray	8	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Myrtle pachystima	5	
				Pinegrass	6	
				Spreading dogbane	5	
				Sweetcicely	5	
118:						
Dinkelman-------	PSME/SYAL	Favorable	---	Arrowleaf balsamroot	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Bluebunch wheatgrass	5	
				Common snowberry	40	
				Creambush oceanspray	8	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Myrtle pachystima	5	
				Pinegrass	6	
				Spreading dogbane	5	
				Sweetcicely	5	
119:						
Dinkelman-------	PSME/SYAL	Favorable	---	Arrowleaf balsamroot	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Bluebunch wheatgrass	5	
				Common snowberry	40	
				Creambush oceanspray	8	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Myrtle pachystima	5	
				Pinegrass	6	
				Spreading dogbane	5	
				Sweetcicely	5	
120:						
Disautel--------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
121:						
Disautel--------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
122:						
Disautel--------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
Nespelem--------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
123:						
Disautel--------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
Rock outcrop.						
124:						
Donavan---------	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	45	
				Common snowberry	1	
				Common yarrow	5	
				Longleaf fleabane	1	
				Other annual forbs	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
125:						
Donavan---------	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	45	
				Common snowberry	1	
				Common yarrow	5	
				Longleaf fleabane	1	
				Other annual forbs	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
126:						
Donavan	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	45	
				Common snowberry	1	
				Common yarrow	5	
				Longleaf fleabane	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
127:						
Donavan	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	45	
				Common snowberry	1	
				Common yarrow	5	
				Longleaf fleabane	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
128:						
Donavan	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Virginia strawberry	1	
				Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common chokecherry	5	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other annual forbs	1	
				Other perennial forbs	8	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
129:						
Donavan	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Virginia strawberry	1	
				Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common chokecherry	5	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other annual forbs	1	
				Other perennial forbs	8	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
130:						
Donavan	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Virginia strawberry	1	
				Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common chokecherry	5	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other annual forbs	1	
				Other perennial forbs	8	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
131:						
Donavan	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
132:						
Donavan	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
133:						
Donavan	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Virginia strawberry	1	
				Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common chokecherry	5	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other annual forbs	1	
				Other perennial forbs	8	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
133:						
Goldlake	PIPO/SYAL,WET	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Woods' rose	5	
				Blue wildrye	5	
				Common snowberry	40	
				Gland cinquefoil	5	
				Northern bedstraw	5	
				Northwest cinquefoil	5	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	2	
				Pinegrass	5	
				Prickly currant	10	
				Tall Oregongrape	5	
134:						
Donavan	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Virginia strawberry	1	
				Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common chokecherry	5	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other annual forbs	1	
				Other perennial forbs	8	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
Northstar	PIPO/FEID	Favorable	---	Idaho fescue	45	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	1	
				Saskatoon serviceberry	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	1	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	
135:						
Donavan	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	45	
				Common snowberry	1	
				Common yarrow	5	
				Longleaf fleabane	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
136:						
Donavan---------	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
Rock outcrop.						
137:						
Donavan---------	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	1	
				Bluebunch wheatgrass	1	
				Common snowberry	45	
				Common yarrow	5	
				Low Oregongrape	1	
				Other perennial forbs	15	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
Rock outcrop.						
138:						
Donavan---------	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	45	
				Common snowberry	1	
				Common yarrow	5	
				Longleaf fleabane	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
Rock outcrop.						
139:						
Duleylake-------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
140:						
Elbowlake-------	ABGR/LIBO2	Favorable	---	Colombian brome	6	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	8	
				Bride's bonnet	5	
				Creambush oceanspray	6	
				Feather Solomon's seal	5	
				Longtube twinflower	20	
				Myrtle pachystima	9	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White spirea	5	
141:						
Elbowlake-------	ABGR/LIBO2	Favorable	---	Colombian brome	6	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	8	
				Bride's bonnet	5	
				Creambush oceanspray	6	
				Feather Solomon's seal	5	
				Longtube twinflower	20	
				Myrtle pachystima	9	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White spirea	5	
142:						
Elbowlake-------	ABGR/LIBO2	Favorable	---	Colombian brome	6	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	8	
				Bride's bonnet	5	
				Creambush oceanspray	6	
				Feather Solomon's seal	5	
				Longtube twinflower	20	
				Myrtle pachystima	9	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White spirea	5	
143:						
Elbowlake-------	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	6	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
144:						
Elbowlake-------	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	6	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White spirea	5	
145:						
Elbowlake-------	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	6	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White spirea	5	
146:						
Ellisforde------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
147:						
Ellisforde------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
148:						
Ellisforde	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
149:						
Elvedere	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
150:						
Elvedere	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
151:						
Elvedere	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
152:						
Elvedere	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
Leahy	ALKALI BOTTOM 9-15 PZ	Favorable	3,500	Sandberg bluegrass		5
		Normal	2,500	Alkali cordgrass		10
		Unfavorable	2,000	Basin wildrye		40
				Black greasewood		15
				Cinquefoil		2
				Inland saltgrass		20
				Rose		1
				Threadleaf sedge		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
153:						
Emdent----------	SEMIWET MEADOW 9-15 PZ	Favorable	5,000	Baltic rush		5
		Normal	4,000	Nebraska sedge		10
		Unfavorable	3,000	Sandberg bluegrass		5
				Bearded wheatgrass		5
				Bluejoint		5
				Common cowparsnip		5
				Iris		5
				Mannagrass		5
				Meadow barley		5
				Mint		5
				Northern reedgrass		15
				Tufted hairgrass		20
154:						
Emdent----------	SEMIWET MEADOW 9-15 PZ	Favorable	5,000	Baltic rush		5
		Normal	4,000	Nebraska sedge		10
		Unfavorable	3,000	Sandberg bluegrass		5
				Bearded wheatgrass		5
				Bluejoint		5
				Common cowparsnip		5
				Iris		5
				Mannagrass		5
				Meadow barley		5
				Mint		5
				Northern reedgrass		15
				Tufted hairgrass		20
155:						
Ewall----------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Antelope bitterbrush	35	
				Arrowleaf balsamroot	9	
				Ballhead sandwort	5	
				Bluebunch wheatgrass	10	
				Common yarrow	1	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other perennial grasses	1	
				Other shrubs	1	
				Tufted phlox	5	
156:						
Ewall----------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Antelope bitterbrush	35	
				Arrowleaf balsamroot	9	
				Ballhead sandwort	5	
				Bluebunch wheatgrass	10	
				Common yarrow	1	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other perennial grasses	1	
				Other shrubs	1	
				Tufted phlox	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
157:						
Ewall	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
158:						
Ewall	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
159:						
Ewall	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
160:						
Farrell	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
161:						
Farrell	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
162:						
Farrell---------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
163:						
Farrell---------	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
164:						
Fivelakes-------	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
165:						
Fivelakes-------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
166:						
Fivelakes-------	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
167:						
Fivelakes-------	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
168:						
Fivelakes-------	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
169:						
Friedlander-----	PSME/PHMA	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Common snowberry	6	
				Creambush oceanspray	10	
				Dwarf huckleberry	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	5	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
170:						
Friedlander-----	PSME/PHMA	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Common snowberry	6	
				Creambush oceanspray	10	
				Dwarf huckleberry	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	5	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
171:						
Friedlander-----	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Creambush oceanspray	5	
				Dwarf huckleberry	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Myrtle pachystima	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
172:						
Garrison	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Black hawthorn	5	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White spirea	5	
173:						
Garrison	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Black hawthorn	5	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White spirea	5	
174:						
Garrison	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Black hawthorn	5	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White spirea	5	
175:						
Georgecreek	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Bluebunch wheatgrass	1	
				Cascade Oregongrape	5	
				Common snowberry	45	
				Common yarrow	2	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	15	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
176:						
Georgecreek-----	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Bluebunch wheatgrass	1	
				Cascade Oregongrape	5	
				Common snowberry	45	
				Common yarrow	2	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	15	
				Silky lupine	5	
177:						
Georgecreek-----	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
178:						
Georgecreek-----	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
179:						
Ginnis----------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
180:						
Ginnis----------	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
181:						
Ginnis	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
182:						
Ginnis	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
Ginnis	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
183:						
Ginnis	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Ginnis	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
184:						
Ginnis	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
Conconully	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
185:						
Ginnis	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
Conconully	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
186:						
Ginnis	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
Rock outcrop.						
187:						
Glenrose	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Low Oregongrape	5	
				Meadow deathcamas	5	
				Pinegrass	6	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Sweetcicely	5	
				White spirea	6	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
188:						
Glenrose---------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Low Oregongrape	5	
				Meadow deathcamas	5	
				Pinegrass	6	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Sweetcicely	5	
				White spirea	6	
				White stoneseed	5	
189:						
Goddard---------	PSME/CARU,ARUV	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue wildrye	5	
				Common snowberry	5	
				Heartleaf arnica	5	
				Myrtle pachystima	5	
				Pinegrass	35	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White stoneseed	5	
190:						
Goddard---------	PSME/CARU,ARUV	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue wildrye	5	
				Common snowberry	5	
				Heartleaf arnica	5	
				Myrtle pachystima	5	
				Pinegrass	35	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White stoneseed	5	
191:						
Goddard---------	PSME/CARU,ARUV	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue wildrye	5	
				Common snowberry	5	
				Heartleaf arnica	5	
				Myrtle pachystima	5	
				Pinegrass	35	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
192:						
Goldlake	PIPO/SYAL,WET	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Woods' rose	5	
				Blue wildrye	5	
				Common snowberry	40	
				Gland cinquefoil	5	
				Northern bedstraw	5	
				Northwest cinquefoil	5	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	2	
				Pinegrass	5	
				Prickly currant	10	
				Tall Oregongrape	5	
193:						
Gooseflats	LOAMY BOTTOM 9-15 PZ	Favorable	4,000	Sandberg bluegrass		5
		Normal	3,000	Antelope bitterbrush		10
		Unfavorable	2,000	Basin wildrye		60
				Big sagebrush		5
				Bluebunch wheatgrass		20
				Rose		5
Gooseflats	ALKALI BOTTOM 9-15 PZ	Favorable	3,500	Sandberg bluegrass		5
		Normal	2,500	Alkali cordgrass		10
		Unfavorable	2,000	Basin wildrye		40
				Black greasewood		15
				Cinquefoil		2
				Inland saltgrass		20
				Rose		1
				Threadleaf sedge		5
194:						
Growden	ABLA2/CARU	Favorable	---	Colombian brome	5	
		Normal	---	Indian paintbrush	5	
		Unfavorable	---	Menzies' campion	5	
				Common yarrow	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Myrtle pachystima	5	
				Pale agoseris	5	
				Pinegrass	30	
				Prairie Junegrass	5	
				Raceme pussytoes	5	
				Showy aster	5	
				Silky lupine	5	
				Subalpine fir	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
195:						
Hadencreek------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	7	
				Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Meadow deathcamas	5	
				Pinegrass	7	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Tall Oregongrape	5	
				White spirea	5	
196:						
Haley----------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
197:						
Haley----------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
198:						
Haley----------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
199:						
Hallcreek-------	PIPO/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Meadow deathcamas	5	
				Northern bedstraw	5	
				Pale agoseris	5	
				Pinegrass	6	
				Silky lupine	5	
				White spirea	8	
				Wild hyacinth	5	
200:						
Haploxerolls----	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
201:						
Hartill---------	ABGR/LIBO2	Favorable	---	Rocky Mountain maple	6	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	10	
				Blue huckleberry	5	
				Bride's bonnet	5	
				Common snowberry	5	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Myrtle pachystima	20	
				Pinegrass	6	
				Sidebells shinleaf	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	8	
202:						
Hartill---------	ABGR/LIBO2	Favorable	---	Rocky Mountain maple	6	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	10	
				Blue huckleberry	5	
				Bride's bonnet	5	
				Common snowberry	5	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Myrtle pachystima	20	
				Pinegrass	6	
				Sidebells shinleaf	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	8	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
203:						
Hellgate--------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	10	
				Common yarrow	5	
				Other annual forbs	3	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	5	
				Silky lupine	5	
204:						
Hellgate--------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Baldhip rose	10	
		Unfavorable	---	Bluebunch wheatgrass	2	
				Common snowberry	40	
				Common yarrow	1	
				Low Oregongrape	10	
				Other perennial forbs	10	
				Other shrubs	6	
				Pinegrass	10	
				Silky lupine	5	
205:						
Henneway--------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Baldhip rose	10	
		Unfavorable	---	Bride's bonnet	5	
				Common snowberry	8	
				Creambush oceanspray	5	
				Longtube twinflower	5	
				Mallow ninebark	5	
				Myrtle pachystima	20	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	7	
206:						
Henneway--------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Baldhip rose	10	
		Unfavorable	---	Bride's bonnet	5	
				Common snowberry	8	
				Creambush oceanspray	5	
				Longtube twinflower	5	
				Mallow ninebark	5	
				Myrtle pachystima	20	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	7	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
207:						
Henneway--------	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Bride's bonnet	2	
				Common snowberry	6	
				Creambush oceanspray	20	
				Longtube twinflower	5	
				Mallow ninebark	15	
				Myrtle pachystima	6	
				Pinegrass	6	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	6	
208:						
Heytou----------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Stubblefield----	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
209:						
Histosols-------	EMERGENT WETLAND/PERMANENTLY FLOODED	Favorable	5,000	Rocky Mountain pond-lily		15
		Normal	5,000	Broadleaf cattail		75
		Unfavorable	5,000	Duckweed		5
				Willow		5
210:						
Hobohill--------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
211:						
Hobohill---------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
212:						
Hodgson---------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Black hawthorn	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Tall Oregongrape	5	
				White hawkweed	5	
				White spirea	5	
				White stoneseed	5	
				Woodland strawberry	5	
213:						
Hodgson---------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Black hawthorn	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Tall Oregongrape	5	
				White hawkweed	5	
				White spirea	5	
				White stoneseed	5	
				Woodland strawberry	5	
214:						
Hodgson---------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Black hawthorn	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Tall Oregongrape	5	
				White hawkweed	5	
				White spirea	5	
				White stoneseed	5	
				Woodland strawberry	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		Pct	Pct
215:						
Hodgson	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Black hawthorn	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Pinegrass	5	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Tall Oregongrape	5	
				White hawkweed	5	
				White spirea	5	
				White stoneseed	5	
				Woodland strawberry	5	
216:						
Hudnut	PIPO/SYAL	Favorable	---	Idaho fescue	15	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Saskatoon serviceberry	5	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	10	
				Common snowberry	5	
				Common yarrow	5	
				Gland cinquefoil	1	
				Lupine	5	
				Other annual forbs	1	
				Other perennial forbs	9	
				Other perennial grasses	5	
				Other shrubs	1	
				Rose	1	
				White spirea	35	
217:						
Hudnut	PIPO/SYAL	Favorable	---	Idaho fescue	15	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Saskatoon serviceberry	5	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	10	
				Common snowberry	5	
				Common yarrow	5	
				Gland cinquefoil	1	
				Lupine	5	
				Other annual forbs	1	
				Other perennial forbs	9	
				Other perennial grasses	5	
				Other shrubs	1	
				Rose	1	
				White spirea	35	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
218:						
Hunters	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	6	
		Unfavorable	---	Woods' rose	5	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	40	
				Feather Solomon's seal	5	
				Longleaf hawksbeard	2	
				Nineleaf biscuitroot	5	
				Pinegrass	7	
				Tall Oregongrape	6	
				White hawkweed	5	
				White stoneseed	5	
219:						
Hunters	COOL UPLAND 15+ PZ	Favorable	1,150	Idaho fescue		15
		Normal	1,000	Saskatoon serviceberry		5
		Unfavorable	850	Woods' rose		5
				Arrowleaf balsamroot		10
				Bluebunch wheatgrass		35
				Common chokecherry		5
				Common snowberry		5
				Longleaf hawksbeard		5
				Nineleaf biscuitroot		5
				Ponderosa pine		5
				White hawkweed		5
220:						
Inchelium	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	8	
				Black hawthorn	5	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Hook violet	5	
				Low Oregongrape	6	
				Pinegrass	6	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
221:						
Inchelium	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	8	
				Black hawthorn	5	
				Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Hook violet	5	
				Low Oregongrape	6	
				Pinegrass	6	
				Silky lupine	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
222:						
Inkler	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	6	
				Blue wildrye	5	
				Common snowberry	10	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
223:						
Inkler	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	6	
				Blue wildrye	5	
				Common snowberry	10	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
224:						
Inkler	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	6	
				Blue wildrye	5	
				Common snowberry	10	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
225:						
Inkler----------	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	6	
				Blue wildrye	5	
				Common snowberry	10	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Baldknob---------	DRY STONY 15+ PZ	Favorable	600	Cusick's bluegrass		5
		Normal	400	Idaho fescue		60
		Unfavorable	200	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Rock outcrop.						
226:						
Inkler----------	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	6	
				Blue wildrye	5	
				Common snowberry	10	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Baldknob---------	DRY STONY 15+ PZ	Favorable	600	Cusick's bluegrass		5
		Normal	400	Idaho fescue		60
		Unfavorable	200	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
227:						
Inkler	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	6	
				Blue wildrye	5	
				Common snowberry	10	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Rock outcrop.						
228:						
Inkler	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	6	
				Blue wildrye	5	
				Common snowberry	10	
				Creambush oceanspray	9	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Rock outcrop.						
229:						
Jimcreek	PSME/SYAL,WET	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Woods' rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	50	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	1	
				Redosier dogwood	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Thimbleberry	1	
				Western meadowrue	1	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
230:						
Johntom	STONY 15+ PZ	Favorable	500	Idaho fescue		20
		Normal	400	Saskatoon serviceberry		2
		Unfavorable	300	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		3
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2
Rock outcrop.						
Rubble land.						
231:						
Karamin	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Blue wildrye	6	
				Common snowberry	15	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Kinnikinnick	5	
				Pale agoseris	5	
				Pinegrass	8	
				Silky lupine	5	
				Spike trisetum	5	
				White spirea	15	
				White stoneseed	5	
				Wild hyacinth	5	
				Woodland strawberry	5	
232:						
Karamin	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Blue wildrye	6	
				Common snowberry	15	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Kinnikinnick	5	
				Pale agoseris	5	
				Pinegrass	8	
				Silky lupine	5	
				Spike trisetum	5	
				White spirea	15	
				White stoneseed	5	
				Wild hyacinth	5	
				Woodland strawberry	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
233:						
Karamin----------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	6	
		Unfavorable	---	Blue wildrye	6	
				Common snowberry	15	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Kinnikinnick	5	
				Pale agoseris	5	
				Pinegrass	8	
				Silky lupine	5	
				Spike trisetum	5	
				White spirea	15	
				White stoneseed	5	
				Wild hyacinth	5	
				Woodland strawberry	5	
234:						
Kartar----------	PIPO/FEID	Favorable	---	Idaho fescue	35	
		Normal	---	Ross' sedge	2	
		Unfavorable	---	Bluebunch wheatgrass	25	
				Gland cinquefoil	2	
				Low pussytoes	5	
				Other annual forbs	2	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	2	
				Sassafras	5	
				Silky lupine	10	
				Slender hawksbeard	2	
235:						
Kellerbutte-----	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	8	
				Blue huckleberry	5	
				Creambush oceanspray	10	
				Heartleaf arnica	5	
				Longtube twinflower	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				White hawkweed	5	
				White spirea	6	
236:						
Kellerbutte-----	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	8	
				Blue huckleberry	5	
				Creambush oceanspray	10	
				Heartleaf arnica	5	
				Longtube twinflower	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				White hawkweed	5	
				White spirea	6	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
237:						
Kenotrail-------	PSME/CARU,ARUV	Favorable	---	Scouler's willow	5	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Feather Solomon's seal	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	5	
238:						
Kewach----------	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	6	
				Common snowberry	8	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	6	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
239:						
Kewach----------	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	6	
				Common snowberry	8	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	6	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
240:						
Kewach	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	6	
				Common snowberry	8	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	6	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
241:						
Kewach	PSME/PHMA,PAMY	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	6	
				Common snowberry	8	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	6	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
242:						
Kiehl	PSME/PHMA,PAMY	Favorable	---	Utah honeysuckle	10	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	5	
				Common snowberry	7	
				Creambush oceanspray	15	
				Longtube twinflower	5	
				Mallow ninebark	20	
				Myrtle pachystima	10	
				Pinegrass	6	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
243:						
Kiehl	PSME/PHMA,PAMY	Favorable	---	Utah honeysuckle	10	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	5	
				Common snowberry	7	
				Creambush oceanspray	15	
				Longtube twinflower	5	
				Mallow ninebark	20	
				Myrtle pachystima	10	
				Pinegrass	6	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
244:						
Kiehl	PSME/PHMA,PAMY	Favorable	---	Utah honeysuckle	10	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	5	
				Common snowberry	7	
				Creambush oceanspray	15	
				Longtube twinflower	5	
				Mallow ninebark	20	
				Myrtle pachystima	10	
				Pinegrass	6	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
245:						
Kiehl	ABGR/LIBO2	Favorable	---	Utah honeysuckle	5	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	10	
				Bride's bonnet	5	
				Common snowberry	6	
				Creambush oceanspray	6	
				Longtube twinflower	10	
				Mallow ninebark	6	
				Myrtle pachystima	15	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
246:						
Kiehl	ABGR/LIBO2	Favorable	---	Utah honeysuckle	5	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	10	
				Bride's bonnet	5	
				Common snowberry	6	
				Creambush oceanspray	6	
				Longtube twinflower	10	
				Mallow ninebark	6	
				Myrtle pachystima	15	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
247:						
Kiehl	ABGR/LIBO2	Favorable	---	Utah honeysuckle	5	
		Normal	---	Baldhip rose	7	
		Unfavorable	---	Blue huckleberry	10	
				Bride's bonnet	5	
				Common snowberry	6	
				Creambush oceanspray	6	
				Longtube twinflower	10	
				Mallow ninebark	6	
				Myrtle pachystima	15	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
248:						
Koepke	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White hawkweed	5	
				White stoneseed	5	
249:						
Lakesol	PSME/SYAL	Favorable	---	Saskatoon serviceberry	6	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	7	
				Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Meadow deathcamas	5	
				Pinegrass	7	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Tall Oregongrape	5	
				White spirea	5	
250:						
Lithic Xerorthents	MOUNTAIN VERY SHALLOW 15+ PZ	Favorable	250	Idaho fescue		20
		Normal	200	Saskatoon serviceberry		5
		Unfavorable	125	Wyeth buckwheat		5
				Bluebunch wheatgrass		40
				Common yarrow		5
				Littleleaf bush penstemon		1
				Other annual forbs		1
				Other perennial forbs		1
				Other perennial grasses		1
				Other shrubs		1
				Tufted phlox		5
				Wormleaf stonecrop		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
250:						
Baldknob--------	DRY STONY 15+ PZ	Favorable	600	Cusick's bluegrass		5
		Normal	400	Idaho fescue		60
		Unfavorable	200	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Rock outcrop.						
251:						
Lithic Xerorthents----	MOUNTAIN VERY SHALLOW 15+ PZ	Favorable	250	Idaho fescue		20
		Normal	200	Saskatoon serviceberry		5
		Unfavorable	125	Wyeth buckwheat		5
				Bluebunch wheatgrass		40
				Common yarrow		5
				Littleleaf bush penstemon		1
				Other annual forbs		1
				Other perennial forbs		1
				Other perennial grasses		1
				Other shrubs		1
				Tufted phlox		5
				Wormleaf stonecrop		5
Baldknob--------	DRY STONY 15+ PZ	Favorable	600	Cusick's bluegrass		5
		Normal	400	Idaho fescue		60
		Unfavorable	200	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Rock outcrop.						
252:						
Logy----------	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
253:						
Loony----------	PSME/CARU,ARUV	Favorable	---	Colombian brome	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common yarrow	5	
				Dwarf huckleberry	5	
				Fireweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Silky lupine	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				White spirea	5	
				Woodland strawberry	1	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
254:						
Lostcreek-------	PSME/SYAL,WET	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Virginia strawberry	2	
		Unfavorable	---	Woods' rose	10	
				Blue wildrye	5	
				Common snowberry	25	
				Gland cinquefoil	3	
				Low Oregongrape	3	
				Other perennial forbs	5	
				Other shrubs	5	
				Pinegrass	5	
				Starry false Solomon's seal	2	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White spirea	15	
255:						
Louiecreek------	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Virginia strawberry	5	
				Baldhip rose	9	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Common yarrow	5	
				Houndstongue hawkweed	5	
				Low pussytoes	5	
				Northwest cinquefoil	5	
				Pinegrass	6	
				Silky lupine	5	
				Sticky geranium	5	
				White stoneseed	5	
256:						
Louploup--------	PSME/CARU	Favorable	---	Ross' sedge	5	
		Normal	---	Virginia strawberry	3	
		Unfavorable	---	Woods' rose	1	
				Blue huckleberry	5	
				Kinnikinnick	5	
				Myrtle pachystima	10	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	3	
				Pinegrass	50	
				Silky lupine	5	
				White hawkweed	1	
				White spirea	5	
257:						
Louploup--------	PSME/CARU	Favorable	---	Ross' sedge	5	
		Normal	---	Virginia strawberry	3	
		Unfavorable	---	Woods' rose	1	
				Blue huckleberry	5	
				Kinnikinnick	5	
				Myrtle pachystima	10	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	3	
				Pinegrass	50	
				Silky lupine	5	
				White hawkweed	1	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
258:						
Lynxcreek-------	ABLA2/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Bride's bonnet	10	
				Longtube twinflower	25	
				Myrtle pachystima	5	
				Pinegrass	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
259:						
Malott----------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
260:						
Malott----------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
261:						
Malott----------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
262:						
Malott	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
263:						
Malott	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
264:						
Malott	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Rock outcrop.						
265:						
Malott	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
266:						
Malott----------	DRY LAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Torriorthents---	ERODED ESCARPMENTS	Favorable	900	Sandberg bluegrass		1
		Normal	700	Wyeth buckwheat		5
		Unfavorable	500	Antelope bitterbrush		20
				Arrowleaf balsamroot		5
				Bluebunch wheatgrass		25
				Common yarrow		1
				Needleandthread		5
				Other annual forbs		1
				Other perennial forbs		10
				Other perennial grasses		1
				Other shrubs		5
				Purple sage		5
				Silky lupine		5
				Snow buckwheat		1
267:						
Manley----------	ABLA2/VACCI	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	20	
				Feather Solomon's seal	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
268:						
Manley----------	ABLA2/VACCI	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	20	
				Feather Solomon's seal	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
269:						
Manley	ABLA2/VACCI	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	20	
				Feather Solomon's seal	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
270:						
Manley	ABLA2/VACCI	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	20	
				Feather Solomon's seal	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Codylake	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	25	
				Darkwoods violet	5	
				Fireweed	5	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
271:						
Manley----------	ABLA2/VACCI	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	20	
				Feather Solomon's seal	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Rock outcrop.						
272:						
Manley----------	ABLA2/VACCI	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	20	
				Feather Solomon's seal	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prickly currant	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
Rock outcrop.						
273:						
Martella---------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Baldhip rose	10	
		Unfavorable	---	Blue huckleberry	10	
				Bride's bonnet	5	
				Dwarf huckleberry	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Longtube twinflower	15	
				Myrtle pachystima	15	
				Pinegrass	5	
				Sidebells shinleaf	5	
				Silky lupine	7	
				Starry false Solomon's seal	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
274:						
Martella--------	PSME/CARU	Favorable	---	Colombian brome	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue huckleberry	16	
				Bride's bonnet	2	
				Dwarf huckleberry	8	
				Heartleaf arnica	6	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	40	
				Sidebells shinleaf	5	
				Silky lupine	6	
				Starry false Solomon's seal	1	
				Western rattlesnake plantain	5	
				White hawkweed	5	
275:						
Martella--------	PSME/CARU	Favorable	---	Colombian brome	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue huckleberry	16	
				Bride's bonnet	2	
				Dwarf huckleberry	8	
				Heartleaf arnica	6	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	40	
				Sidebells shinleaf	5	
				Silky lupine	6	
				Starry false Solomon's seal	1	
				Western rattlesnake plantain	5	
				White hawkweed	5	
276:						
Medisaprists----	DECIDUOUS	Favorable	---	American skunkcabbage	5	
		Normal	---	American trailplant	10	
		Unfavorable	---	Saskatoon serviceberry	1	
				Woods' rose	10	
				Black hawthorn	5	
				Blue wildrye	5	
				Common cowparsnip	20	
				Common snowberry	45	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Redosier dogwood	10	
				Starry false Solomon's seal	5	
				Thinleaf alder	1	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
277:						
Merkel	PSME/CARU	Favorable	---	Indian paintbrush	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Scouler's willow	5	
				Virginia strawberry	5	
				Blue huckleberry	5	
				Common snowberry	5	
				Common yarrow	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	5	
278:						
Merkel	PSME/CARU	Favorable	---	Indian paintbrush	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Scouler's willow	5	
				Virginia strawberry	5	
				Blue huckleberry	5	
				Common snowberry	5	
				Common yarrow	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	5	
279:						
Merkel	PSME/CARU	Favorable	---	Indian paintbrush	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Scouler's willow	5	
				Virginia strawberry	5	
				Blue huckleberry	5	
				Common snowberry	5	
				Common yarrow	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	5	
280:						
Merkel	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Blue wildrye	5	
		Unfavorable	---	Common snowberry	45	
				Creambush oceanspray	5	
				Kinnikinnick	5	
				Low Oregongrape	7	
				Other perennial forbs	5	
				Other shrubs	5	
				Pinegrass	8	
				White spirea	10	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
281:						
Merkel	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Blue wildrye	5	
		Unfavorable	---	Common snowberry	45	
				Creambush oceanspray	5	
				Kinnikinnick	5	
				Low Oregongrape	7	
				Other perennial forbs	5	
				Other shrubs	5	
				Pinegrass	8	
				White spirea	10	
282:						
Mineral	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common snowberry	25	
				Creambush oceanspray	5	
				Houndstongue hawkweed	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	10	
				Roundleaf alumroot	5	
				Silky lupine	5	
				White spirea	5	
283:						
Mineral	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common snowberry	25	
				Creambush oceanspray	5	
				Houndstongue hawkweed	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	10	
				Roundleaf alumroot	5	
				Silky lupine	5	
				White spirea	5	
284:						
Mineral	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common snowberry	25	
				Creambush oceanspray	5	
				Houndstongue hawkweed	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	10	
				Roundleaf alumroot	5	
				Silky lupine	5	
				White spirea	5	
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
285:						
Mineral	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common snowberry	25	
				Creambush oceanspray	5	
				Houndstongue hawkweed	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	10	
				Roundleaf alumroot	5	
				Silky lupine	5	
				White spirea	5	
Rock outcrop.						
286:						
Mineral	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common snowberry	25	
				Creambush oceanspray	5	
				Houndstongue hawkweed	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	10	
				Roundleaf alumroot	5	
				Silky lupine	5	
				White spirea	5	
Rock outcrop.						
287:						
Mineral	PSME/PHMA,ARCO	Favorable	---	Colombian brome	5	
		Normal	---	Idaho fescue	5	
		Unfavorable	---	Ross' sedge	5	
				Saskatoon serviceberry	5	
				Baldhip rose	10	
				Common snowberry	15	
				Creambush oceanspray	15	
				Houndstongue hawkweed	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Silky lupine	5	
				White spirea	5	
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
288:						
Mitchellpoint---	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	8	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Northern bedstraw	5	
				Pinegrass	7	
				Raceme pussytoes	5	
				Silky lupine	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				White stoneseed	5	
				Woodland strawberry	5	
289:						
Monse----------	LOAMY BOTTOM 9-15 PZ	Favorable	4,000	Sandberg bluegrass		5
		Normal	3,000	Antelope bitterbrush		10
		Unfavorable	2,000	Basin wildrye		60
				Big sagebrush		5
				Bluebunch wheatgrass		20
				Rose		5
290:						
Morical---------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
291:						
Morical---------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
292:						
Morical---------	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
293:						
Moscow----------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	20	
				Bride's bonnet	5	
				Longtube twinflower	9	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	6	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western rattlesnake plantain	5	
				White spirea	5	
294:						
Moscow----------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	20	
				Bride's bonnet	5	
				Longtube twinflower	9	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	6	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western rattlesnake plantain	5	
				White spirea	5	
295:						
Moses----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	10	
		Unfavorable	---	Utah honeysuckle	20	
				Baldhip rose	10	
				Blue huckleberry	10	
				Bride's bonnet	2	
				Longtube twinflower	10	
				Myrtle pachystima	5	
				Prince's pine	3	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	10	
				Sweetcicely	3	
				Sweetscented bedstraw	2	
				Western meadowrue	3	
				Western rattlesnake plantain	2	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
296:						
Moses	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	10	
		Unfavorable	---	Utah honeysuckle	20	
				Baldhip rose	10	
				Blue huckleberry	10	
				Bride's bonnet	2	
				Longtube twinflower	10	
				Myrtle pachystima	5	
				Prince's pine	3	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	10	
				Sweetcicely	3	
				Sweetscented bedstraw	2	
				Western meadowrue	3	
				Western rattlesnake plantain	2	
297:						
Moses	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	10	
		Unfavorable	---	Utah honeysuckle	20	
				Baldhip rose	10	
				Blue huckleberry	10	
				Bride's bonnet	5	
				Longtube twinflower	10	
				Myrtle pachystima	5	
				Prince's pine	5	
				Starry false Solomon's seal	10	
				Sweetcicely	5	
				Western meadowrue	5	
298:						
Moses	ABLA2-PIAL/ARUV	Favorable	---	Cascade azalea	85	
		Normal	---	Grouse blueberry	1	
		Unfavorable	---	Pink mountainheath	5	
299:						
Narcisse	PIPO/SYAL,WET	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Woods' rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	1	
				Common snowberry	60	
				Low Oregongrape	1	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	3	
				Redosier dogwood	1	
				Starry false Solomon's seal	1	
				Sweetscented bedstraw	5	
				Thimbleberry	5	
				Western meadowrue	1	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
300:						
Narcisse--------	PIPO/SYAL,WET	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Woods' rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	1	
				Common snowberry	60	
				Low Oregongrape	1	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	3	
				Redosier dogwood	1	
				Starry false Solomon's seal	1	
				Sweetscented bedstraw	5	
				Thimbleberry	5	
				Western meadowrue	1	
301:						
Nespelem--------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
302:						
Nespelem--------	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
Nespelem--------	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
303:						
Nespelem--------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
303:						
Emdent	SEMIWET MEADOW 9-15 PZ	Favorable	5,000	Baltic rush		5
		Normal	4,000	Nebraska sedge		10
		Unfavorable	3,000	Sandberg bluegrass		5
				Bearded wheatgrass		5
				Bluejoint		5
				Common cowparsnip		5
				Iris		5
				Mannagrass		5
				Meadow barley		5
				Mint		5
				Northern reedgrass		15
				Tufted hairgrass		20
304:						
Nespelem	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
Typic Xerorthents	ERODED LACUSTRINE SEDIMENTS	Favorable	50	Sandberg bluegrass		5
		Normal	50	Wyeth buckwheat		5
		Unfavorable	50	Basin wildrye		40
				Bluebunch wheatgrass		10
				Common yarrow		5
				Other annual forbs		1
				Other perennial forbs		2
				Other perennial grasses		1
				Other shrubs		1
				Silky lupine		10
				Threetip sagebrush		20
305:						
Neuske	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Baldhip rose	8	
				Blue wildrye	5	
				Campanula	5	
				Common snowberry	25	
				Common yarrow	5	
				Dwarf huckleberry	5	
				Longleaf hawksbeard	5	
				Pinegrass	7	
				Redstem ceanothus	5	
				Silky lupine	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
306:						
Neuske	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Virginia strawberry	5	
		Unfavorable	---	Baldhip rose	8	
				Blue wildrye	5	
				Campanula	5	
				Common snowberry	25	
				Common yarrow	5	
				Dwarf huckleberry	5	
				Longleaf hawksbeard	5	
				Pinegrass	7	
				Redstem ceanothus	5	
				Silky lupine	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
				White stoneseed	5	
307:						
Nevine	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
Nevine	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	7	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
308:						
Nevine	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
308:						
Nevine	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	7	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
309:						
Nevine	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
Nevine	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	7	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
310:						
Nevine	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
310:						
Nevine----------	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	7	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
Rock outcrop.						
311:						
Nevine----------	PSME/CARU	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	6	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	6	
				White hawkweed	5	
				White spirea	7	
Nevine----------	PSME/PHMA,PAMY	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	7	
				Creambush oceanspray	15	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Mallow ninebark	20	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	6	
Rock outcrop.						
312:						
Newbell---------	ABGR/LIBO2	Favorable	---	American trailplant	5	
		Normal	---	Colombian brome	5	
		Unfavorable	---	Rocky Mountain maple	5	
				Utah honeysuckle	5	
				Blue huckleberry	6	
				Bride's bonnet	6	
				Longtube twinflower	15	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prince's pine	5	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
313:						
Newbell	ABGR/LIBO2	Favorable	---	American trailplant	5	
		Normal	---	Colombian brome	5	
		Unfavorable	---	Rocky Mountain maple	5	
				Utah honeysuckle	5	
				Blue huckleberry	6	
				Bride's bonnet	6	
				Longtube twinflower	15	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prince's pine	5	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
314:						
Newbell	ABGR/LIBO2	Favorable	---	American trailplant	5	
		Normal	---	Colombian brome	5	
		Unfavorable	---	Rocky Mountain maple	5	
				Utah honeysuckle	5	
				Blue huckleberry	6	
				Bride's bonnet	6	
				Longtube twinflower	15	
				Myrtle pachystima	15	
				Pinegrass	5	
				Prince's pine	5	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
315:						
Northstar	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	15	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	5	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	
316:						
Northstar	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	15	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	5	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	9	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
317:						
Northstar	PIPO/FEID	Favorable	---	Idaho fescue	45	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	1	
				Saskatoon serviceberry	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	1	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	
Johntom	STONY 15+ PZ	Favorable	500	Idaho fescue		20
		Normal	400	Saskatoon serviceberry		2
		Unfavorable	300	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		2
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2
Rock outcrop.						
318:						
Northstar	PIPO/FEID	Favorable	---	Idaho fescue	45	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	1	
				Saskatoon serviceberry	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	1	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	
Johntom	STONY 15+ PZ	Favorable	500	Idaho fescue		20
		Normal	400	Saskatoon serviceberry		1
		Unfavorable	300	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
319:						
Northstar-------	PIPO/FEID	Favorable	---	Idaho fescue	45	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	1	
				Saskatoon serviceberry	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	1	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	
Louiecreek------	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Virginia strawberry	5	
				Baldhip rose	9	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Common yarrow	5	
				Houndstongue hawkweed	5	
				Low pussytoes	5	
				Northwest cinquefoil	5	
				Pinegrass	6	
				Silky lupine	5	
				Sticky geranium	5	
				White stoneseed	5	
Rock outcrop.						
320:						
Northstar-------	PIPO/FEID	Favorable	---	Idaho fescue	45	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	1	
				Saskatoon serviceberry	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	1	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
320:						
Louiecreek------	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Virginia strawberry	5	
				Baldhip rose	9	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	25	
				Common yarrow	5	
				Houndstongue hawkweed	5	
				Low pussytoes	5	
				Northwest cinquefoil	5	
				Pinegrass	6	
				Silky lupine	5	
				Sticky geranium	5	
				White stoneseed	5	
Rock outcrop.						
321:						
Northstar-------	PIPO/FEID	Favorable	---	Idaho fescue	45	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	1	
				Saskatoon serviceberry	5	
				Wyeth buckwheat	5	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	20	
				Common yarrow	1	
				Fernleaf biscuitroot	1	
				Other annual forbs	1	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	5	
Rock outcrop.						
322:						
Ohscow----------	PSME/CARU	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Virginia strawberry	2	
				Baldhip rose	1	
				Blue huckleberry	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	40	
				Silky lupine	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
323:						
Ohscow----------	PSME/CARU	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Virginia strawberry	2	
				Baldhip rose	1	
				Blue huckleberry	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	40	
				Silky lupine	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
324:						
Ohscow----------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Virginia strawberry	1	
				Baldhip rose	16	
				Blue huckleberry	15	
				Bride's bonnet	6	
				Heartleaf arnica	5	
				Longtube twinflower	9	
				Myrtle pachystima	15	
				Pinegrass	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
325:						
Ohscow----------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Virginia strawberry	1	
				Baldhip rose	16	
				Blue huckleberry	15	
				Bride's bonnet	6	
				Heartleaf arnica	5	
				Longtube twinflower	9	
				Myrtle pachystima	15	
				Pinegrass	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
326:						
Okanogan---------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
327:						
Omak	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	1	
				Common chokecherry	1	
				Common snowberry	40	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	15	
				Silky lupine	5	
				Weedy Milkvetch	1	
328:						
Owhi	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
329:						
Owhi	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
330:						
Owhi	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
Haley	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
331:						
Oxerine---------	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	7	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Roughfruit fairybells	5	
				White hawkweed	5	
				White spirea	6	
332:						
Oxerine---------	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	7	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Roughfruit fairybells	5	
				White hawkweed	5	
				White spirea	6	
333:						
Oxerine---------	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	7	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Roughfruit fairybells	5	
				White hawkweed	5	
				White spirea	6	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
334:						
Oxerine---------	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	7	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Roughfruit fairybells	5	
				White hawkweed	5	
				White spirea	6	
Rock outcrop.						
335:						
Oxerine---------	PSME/PHMA,PAMY	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	7	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Roughfruit fairybells	5	
				White hawkweed	5	
				White spirea	6	
Rock outcrop.						
336:						
Parmenter-------	PSME/CARU,ARUV	Favorable	---	Ross' sedge	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Fireweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
337:						
Parmenter-------	PSME/CARU,ARUV	Favorable	---	Ross' sedge	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Fireweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				White hawkweed	5	
				White spirea	5	
338:						
Parmenter-------	PSME/CARU,ARUV	Favorable	---	Ross' sedge	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Fireweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				White hawkweed	5	
				White spirea	5	
339:						
Parmenter-------	PSME/CARU,ARUV	Favorable	---	Ross' sedge	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Fireweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				White hawkweed	5	
				White spirea	5	
340:						
Peshastin-------	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
341:						
Peshastin	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
342:						
Peshastin	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
343:						
Phoebe	PSME/SYAL	Favorable	---	Idaho fescue	1	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	6	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	4	
				Common chokecherry	5	
				Common snowberry	40	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Nineleaf biscuitroot	5	
				Pinegrass	6	
				Rose	7	
				Silky lupine	5	
				White stoneseed	5	
344:						
Phoebe	PSME/SYAL	Favorable	---	Idaho fescue	1	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	6	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	4	
				Common chokecherry	5	
				Common snowberry	40	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Nineleaf biscuitroot	5	
				Pinegrass	6	
				Rose	7	
				Silky lupine	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
345:						
Phoebe	PSME/SYAL	Favorable	---	Idaho fescue	1	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	6	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	4	
				Common chokecherry	5	
				Common snowberry	40	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Nineleaf biscuitroot	5	
				Pinegrass	6	
				Rose	7	
				Silky lupine	5	
				White stoneseed	5	
346:						
Phoebe	PSME/SYAL	Favorable	---	Idaho fescue	1	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	6	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	4	
				Common chokecherry	5	
				Common snowberry	40	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Nineleaf biscuitroot	5	
				Pinegrass	6	
				Rose	7	
				Silky lupine	5	
				White stoneseed	5	
347:						
Phoebe	PIPO/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Arrowleaf balsamroot	7	
				Bluebunch wheatgrass	20	
				Common chokecherry	3	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Rose	5	
				Silky lupine	5	
				White stoneseed	5	
348:						
Phoebe	PIPO/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Arrowleaf balsamroot	7	
				Bluebunch wheatgrass	20	
				Common chokecherry	3	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Rose	5	
				Silky lupine	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
349:						
Phoebe	PIPO/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Arrowleaf balsamroot	7	
				Bluebunch wheatgrass	20	
				Common chokecherry	3	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Rose	5	
				Silky lupine	5	
				White stoneseed	5	
350:						
Phoebe	PIPO/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Arrowleaf balsamroot	7	
				Bluebunch wheatgrass	20	
				Common chokecherry	3	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Rose	5	
				Silky lupine	5	
				White stoneseed	5	
Dehart	PIPO/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Nootka rose	5	
				Ross' sedge	5	
				Sandberg bluegrass	5	
				Saskatoon serviceberry	5	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	9	
				Common snowberry	5	
				Common yarrow	5	
				Nineleaf biscuitroot	5	
				Redstem ceanothus	5	
				Silky lupine	5	
				Skyrocket gilia	5	
				White spirea	5	
351:						
Picard	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
352:						
Picard	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
353:						
Pits.						
354:						
Pogue	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
355:						
Pogue	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
356:						
Pogue	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
357:						
Pogue	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
358:						
Pogue	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
359:						
Pogue	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
360:						
Poween	SEMIWET MEADOW 9-15 PZ	Favorable	5,000	Baltic rush		5
		Normal	4,000	Nebraska sedge		10
		Unfavorable	3,000	Sandberg bluegrass		5
				Bearded wheatgrass		5
				Bluejoint		5
				Common cowparsnip		5
				Iris		5
				Mannagrass		5
				Meadow barley		5
				Mint		5
				Northern reedgrass		15
				Tufted hairgrass		20
361:						
Quincy	PIPO/PUTR,ORHY	Favorable	---	Indian ricegrass	10	
		Normal	---	Sandberg bluegrass	2	
		Unfavorable	---	Antelope bitterbrush	40	
				Bluebunch wheatgrass	5	
				Fernleaf biscuitroot	10	
				Needleandthread	15	
				Other annual forbs	5	
				Other perennial forbs	10	
				Other perennial grasses	2	
				Other shrubs	1	
362:						
Quincy	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
363:						
Quincy	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
364:						
Quincy	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
365:						
Quincy	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
366:						
Quincy	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
367:						
Quincy	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
Aeneas	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
368:						
Raisio	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	8	
				Biscuitroot	5	
				Bluebunch wheatgrass	35	
				Common chokecherry	5	
				Common snowberry	6	
				Roundleaf alumroot	5	
				Silky lupine	6	
369:						
Raisio	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	8	
				Biscuitroot	5	
				Bluebunch wheatgrass	35	
				Common chokecherry	5	
				Common snowberry	6	
				Roundleaf alumroot	5	
				Silky lupine	6	
Rock outcrop.						
370:						
Raisio	PSME/SYAL	Favorable	---	Idaho fescue	3	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Biscuitroot	5	
				Bluebunch wheatgrass	7	
				Common chokecherry	5	
				Common snowberry	20	
				Creambush oceanspray	1	
				Heartleaf arnica	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	15	
				Rose	1	
				Roundleaf alumroot	5	
				Silky lupine	5	
Rufus	PSME/FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Bluebunch wheatgrass	15	
				Buckwheat	5	
				Ceanothus	5	
				Lupine	10	
				Other perennial forbs	5	
				Other perennial grasses	5	
				Other shrubs	5	
				Phlox	5	
				Pinegrass	10	
				Prairie Junegrass	10	
				Stonecrop	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
371:						
Raisio	PSME/SYAL	Favorable	---	Idaho fescue	3	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Biscuitroot	5	
				Bluebunch wheatgrass	7	
				Common chokecherry	5	
				Common snowberry	20	
				Creambush oceanspray	1	
				Heartleaf arnica	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	15	
				Rose	1	
				Roundleaf alumroot	5	
				Silky lupine	5	
Rufus	PSME/FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Bluebunch wheatgrass	15	
				Buckwheat	5	
				Ceanothus	5	
				Lupine	10	
				Other perennial forbs	5	
				Other perennial grasses	5	
				Other shrubs	5	
				Phlox	5	
				Pinegrass	10	
				Prairie Junegrass	10	
				Stonecrop	5	
372:						
Raisio	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	8	
				Biscuitroot	5	
				Bluebunch wheatgrass	35	
				Common chokecherry	5	
				Common snowberry	6	
				Roundleaf alumroot	5	
				Silky lupine	6	
Rufus	STONY 15+ PZ	Favorable	500	Idaho fescue		20
		Normal	400	Saskatoon serviceberry		2
		Unfavorable	300	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
373:						
Raisio----------	PIPO/FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	8	
				Biscuitroot	5	
				Bluebunch wheatgrass	35	
				Common chokecherry	5	
				Common snowberry	6	
				Roundleaf alumroot	5	
				Silky lupine	6	
Rufus----------	STONY 15+ PZ	Favorable	500	Idaho fescue		20
		Normal	400	Saskatoon serviceberry		2
		Unfavorable	300	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2
Rock outcrop.						
374:						
Raisio----------	STONY 15+ PZ	Favorable	1,000	Idaho fescue		20
		Normal	800	Saskatoon serviceberry		2
		Unfavorable	600	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2
Rufus----------	STONY 15+ PZ	Favorable	500	Idaho fescue		20
		Normal	400	Saskatoon serviceberry		2
		Unfavorable	300	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
375:						
Raisio	STONY 15+ PZ	Favorable	1,000	Idaho fescue		20
		Normal	800	Saskatoon serviceberry		2
		Unfavorable	600	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2
Rufus	STONY 15+ PZ	Favorable	500	Idaho fescue		20
		Normal	400	Saskatoon serviceberry		2
		Unfavorable	300	Wyeth buckwheat		1
				Arrowleaf balsamroot		3
				Bluebunch wheatgrass		50
				Common chokecherry		2
				Common snowberry		3
				Other perennial forbs		6
				Other shrubs		2
				Rose		2
				Rough fescue		5
				Silky lupine		2
376:						
Ralsen	DECIDUOUS	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Woods' rose	10	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	40	
				Field horsetail	5	
				Other annual forbs	1	
				Other perennial forbs	6	
				Other perennial grasses	1	
				Other perennial grasslikes	1	
				Other shrubs	5	
				Redosier dogwood	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Thimbleberry	1	
377:						
Ratlake	ALKALI BOTTOM 9-15 PZ	Favorable	3,500	Sandberg bluegrass		5
		Normal	2,500	Alkali cordgrass		10
		Unfavorable	2,000	Basin wildrye		40
				Black greasewood		15
				Cinquefoil		2
				Inland saltgrass		20
				Rose		1
				Threadleaf sedge		5
378:						
Reardan	PIPO/FEID	Favorable	---	Idaho fescue	35	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Bluebunch wheatgrass	30	
				Common snowberry	2	
				Lupine	10	
				Other annual grasses	1	
				Other perennial forbs	10	
				Other perennial grasses	6	
				Other shrubs	1	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
379:						
Reardan	PIPO/FEID	Favorable	---	Idaho fescue	35	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Bluebunch wheatgrass	30	
				Common snowberry	2	
				Lupine	10	
				Other annual grasses	1	
				Other perennial forbs	10	
				Other perennial grasses	6	
				Other shrubs	1	
380:						
Rebecca	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
381:						
Rebecca	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
382:						
Renha	ABGR/LIBO2	Favorable	---	Scouler's willow	5	
		Normal	---	Baldhip rose	8	
		Unfavorable	---	Bride's bonnet	5	
				Creambush oceanspray	5	
				Kinnikinnick	5	
				Longtube twinflower	10	
				Mallow ninebark	5	
				Myrtle pachystima	5	
				Pinegrass	6	
				Raceme pussytoes	5	
				Tall Oregongrape	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	6	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
383:						
Renha	ABGR/LIBO2	Favorable	---	Scouler's willow	5	
		Normal	---	Baldhip rose	8	
		Unfavorable	---	Bride's bonnet	5	
				Creambush oceanspray	5	
				Kinnikinnick	5	
				Longtube twinflower	10	
				Mallow ninebark	5	
				Myrtle pachystima	5	
				Pinegrass	6	
				Raceme pussytoes	5	
				Tall Oregongrape	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	6	
384:						
Renha	PSME/PHMA	Favorable	---	Scouler's willow	5	
		Normal	---	Baldhip rose	8	
		Unfavorable	---	Creambush oceanspray	15	
				Kinnikinnick	5	
				Mallow ninebark	15	
				Myrtle pachystima	6	
				Pinegrass	7	
				Raceme pussytoes	5	
				Tall Oregongrape	5	
				Western meadowrue	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	6	
Oxerine	PSME/PHMA	Favorable	---	Rocky Mountain maple	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Common snowberry	7	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	6	
				Pinegrass	6	
				Raceme pussytoes	5	
				Roughfruit fairybells	5	
				White hawkweed	5	
				White spirea	6	
385:						
Republic	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Blue wildrye	5	
		Unfavorable	---	Common chokecherry	5	
				Common snowberry	20	
				Heartleaf arnica	5	
				Other perennial forbs	15	
				Other perennial grasses	5	
				Other shrubs	10	
				Pinegrass	5	
				Rose	5	
				Silky lupine	5	
				White spirea	15	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
386:						
Republic	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Blue wildrye	5	
		Unfavorable	---	Common chokecherry	5	
				Common snowberry	20	
				Heartleaf arnica	5	
				Other perennial forbs	15	
				Other perennial grasses	5	
				Other shrubs	10	
				Pinegrass	5	
				Rose	5	
				Silky lupine	5	
				White spirea	15	
387:						
Republic	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Blue wildrye	5	
		Unfavorable	---	Common chokecherry	5	
				Common snowberry	20	
				Heartleaf arnica	5	
				Other perennial forbs	15	
				Other perennial grasses	5	
				Other shrubs	10	
				Pinegrass	5	
				Rose	5	
				Silky lupine	5	
				White spirea	15	
388:						
Resner	ABLA2/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Sitka alder	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	5	
				Blue huckleberry	20	
				Bride's bonnet	5	
				Longtube twinflower	10	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western rattlesnake plantain	5	
389:						
Resner	ABLA2/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Sitka alder	5	
		Unfavorable	---	Utah honeysuckle	5	
				Baldhip rose	5	
				Blue huckleberry	20	
				Bride's bonnet	5	
				Longtube twinflower	10	
				Myrtle pachystima	10	
				Pinegrass	5	
				Prince's pine	5	
				Sidebells shinleaf	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Thimbleberry	5	
				Western rattlesnake plantain	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
390:						
Ret	PSME/SYAL,WET	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Woods' rose	10	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	40	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	1	
				Redosier dogwood	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Thimbleberry	10	
				Western meadowrue	5	
391:						
Riverwash.						
392:						
Rock outcrop.						
393:						
Rock outcrop.						
Chumstick	PSME/FEID	Favorable	---	Idaho fescue	30	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Bluebunch wheatgrass	20	
				Common yarrow	5	
				Myrtle pachystima	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	7	
				Sulphur wildbuckwheat	1	
				Tufted phlox	10	
				White spirea	10	
394:						
Rock outcrop.						
Chumstick	PSME/JUCO	Favorable	---	California brome	6	
		Normal	---	Idaho fescue	6	
		Unfavorable	---	Saskatoon serviceberry	2	
				Bluebunch wheatgrass	10	
				Common juniper	20	
				Common yarrow	2	
				Mountain big sagebrush	6	
				Myrtle pachystima	1	
				Other perennial forbs	10	
				Other perennial grasses	6	
				Other shrubs	5	
				Pinegrass	20	
				Sulphur wildbuckwheat	6	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
395:						
Rock outcrop.						
Mineral----------	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common snowberry	25	
				Creambush oceanspray	5	
				Houndstongue hawkweed	5	
				Mallow ninebark	10	
				Myrtle pachystima	5	
				Pinegrass	10	
				Roundleaf alumroot	5	
				Silky lupine	5	
				White spirea	5	
396:						
Rock outcrop.						
Rufus----------	PSME/FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Bluebunch wheatgrass	15	
				Buckwheat	5	
				Ceanothus	5	
				Lupine	10	
				Other perennial forbs	5	
				Other perennial grasses	5	
				Other shrubs	5	
				Phlox	5	
				Pinegrass	10	
				Prairie Junegrass	10	
				Stonecrop	5	
397:						
Rock outcrop.						
Soaplake--------	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
398:						
Rock outcrop.						
Swakane	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
399:						
Rock outcrop.						
Vanbrunt	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Lewis' mockorange	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Antelope bitterbrush	20	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	10	
				Common chokecherry	1	
				Common yarrow	5	
				Creambush oceanspray	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	5	
				Other shrubs	3	
				Silky lupine	5	
				Wax currant	10	
400:						
Roosevelt	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
Soaplake	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
401:						
Roosevelt	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
Soaplake	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
Rock outcrop.						
402:						
Rubble land.						
403:						
Rubble land.						
Rock outcrop.						
404:						
Rubble land.						
Rock outcrop.						
Haploxerolls	RUBBLY SLOPES 12+ PZ	Favorable	1,600	Idaho fescue		10
		Normal	1,500	Lewis' mockorange		5
		Unfavorable	1,400	Saskatoon serviceberry		10
				Wyeth buckwheat		2
				Antelope bitterbrush		20
				Arrowleaf balsamroot		5
				Bluebunch wheatgrass		15
				Common chokecherry		15
				Common yarrow		1
				Other perennial forbs		2
				Other perennial grasses		5
				Rose		1
				Wax currant		3

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
405:						
Sacheen	PSME/SYAL	Favorable	---	Ross' avens	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Virginia strawberry	5	
				Baldhip rose	5	
				Blue wildrye	5	
				Bluebell bellflower	5	
				Common snowberry	30	
				Kinnikinnick	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Rosy pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				Yellow penstemon	5	
406:						
Sacheen	PSME/SYAL	Favorable	---	Ross' avens	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Virginia strawberry	5	
				Baldhip rose	5	
				Blue wildrye	5	
				Bluebell bellflower	5	
				Common snowberry	30	
				Kinnikinnick	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Rosy pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				Yellow penstemon	5	
407:						
Sacheen	PSME/SYAL	Favorable	---	Ross' avens	5	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Virginia strawberry	5	
				Baldhip rose	5	
				Blue wildrye	5	
				Bluebell bellflower	5	
				Common snowberry	30	
				Kinnikinnick	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Rosy pussytoes	5	
				Silky lupine	5	
				White hawkweed	5	
				Yellow penstemon	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
408:						
Sanpoil	DECIDUOUS	Favorable	---	American red raspberry	5	
		Normal	---	Dewey sedge	1	
		Unfavorable	---	Lewis' mockorange	5	
				Woods' rose	5	
				Blue wildrye	5	
				Common snowberry	40	
				Field horsetail	5	
				Other perennial forbs	2	
				Other perennial grasses	1	
				Other shrubs	1	
				Redosier dogwood	5	
				Starry false Solomon's seal	5	
				Sweetscented bedstraw	5	
				Tall Oregongrape	5	
				Thimbleberry	5	
409:						
Sanpoil	DECIDUOUS	Favorable	---	American skunkcabbage	8	
		Normal	---	Dewey sedge	1	
		Unfavorable	---	Lewis' mockorange	5	
				Woods' rose	5	
				Blue wildrye	5	
				Common cowparsnip	8	
				Common snowberry	40	
				Other perennial forbs	3	
				Other perennial grasses	1	
				Other shrubs	4	
				Starry false Solomon's seal	5	
				Tall Oregongrape	5	
				Thimbleberry	5	
410:						
Scala	PSME/SYAL	Favorable	---	Baldhip rose	5	
		Normal	---	Blue wildrye	5	
		Unfavorable	---	Common chokecherry	5	
				Common snowberry	30	
				Hook violet	5	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Meadow deathcamas	5	
				Nineleaf biscuitroot	5	
				Pale agoseris	5	
				Pinegrass	5	
				Spike trisetum	5	
				Spreading dogbane	5	
				Sweetcicely	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
411:						
Sclome	PSME/SYAL,WET	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Woods' rose	10	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	40	
				Field horsetail	5	
				Other annual forbs	1	
				Other perennial forbs	6	
				Other perennial grasses	1	
				Other perennial grasslikes	1	
				Other shrubs	5	
				Redosier dogwood	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Thimbleberry	1	
412:						
Scoap	PSME/PHMA,ARCO	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Sticky geranium	5	
				White hawkweed	5	
				White spirea	5	
413:						
Scoap	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Sticky geranium	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
414:						
Scoap	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Sticky geranium	5	
				White hawkweed	5	
				White spirea	5	
415:						
Scoap	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Sticky geranium	5	
				White hawkweed	5	
				White spirea	5	
Rock outcrop.						
416:						
Scoap	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Heartleaf arnica	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Silky lupine	5	
				Sticky geranium	5	
				White hawkweed	5	
				White spirea	5	
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
417:						
Scrabblers------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	6	
		Unfavorable	---	Baldhip rose	10	
				Blue huckleberry	8	
				Bride's bonnet	5	
				Feather Solomon's seal	5	
				Longtube twinflower	15	
				Myrtle pachystima	10	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
418:						
Scrabblers------	ABGR/LIBO2	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	6	
		Unfavorable	---	Baldhip rose	10	
				Blue huckleberry	8	
				Bride's bonnet	5	
				Feather Solomon's seal	5	
				Longtube twinflower	15	
				Myrtle pachystima	10	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
419:						
Scrabblers------	PSME/CARU,ARUV	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	40	
				Roughfruit fairybells	2	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
420:						
Scrabblers	PSME/CARU,ARUV	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Feather Solomon's seal	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	40	
				Roughfruit fairybells	2	
				Sidebells shinleaf	5	
				Sweetcicely	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
421:						
Sitdown	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	20	
				Common snowberry	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	5	
422:						
Skaha	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
423:						
Skaha	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
424:						
Skaha	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
425:						
Skaha	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
426:						
Skaha	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
427:						
Skaha	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2
Rock outcrop.						
428:						
Skanid	PSME/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Wyeth buckwheat	1	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	5	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	8	
				Silky lupine	5	
				White spirea	10	
429:						
Skanid	PSME/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Wyeth buckwheat	1	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	5	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	8	
				Silky lupine	5	
				White spirea	10	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
430:						
Skanid----------	PSME/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Wyeth buckwheat	1	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	5	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	8	
				Silky lupine	5	
				White spirea	10	
431:						
Skanid----------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	5	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
432:						
Skanid----------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	5	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
433:						
Skanid----------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	5	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
434:						
Skanid	PSME/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Wyeth buckwheat	1	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	5	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	8	
				Silky lupine	5	
				White spirea	10	
Rock outcrop.						
435:						
Skanid	PSME/FEID	Favorable	---	Idaho fescue	25	
		Normal	---	Ross' sedge	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Wyeth buckwheat	1	
				Arrowleaf balsamroot	1	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	5	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	8	
				Silky lupine	5	
				White spirea	10	
Rock outcrop.						
436:						
Skanid	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	5	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
Rock outcrop.						
437:						
Spens	PIPO/AGSP	Favorable	---	Pacific monardella	5	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	55	
				Common yarrow	5	
				Other annual forbs	3	
				Other perennial forbs	5	
				Other shrubs	5	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
438:						
Spens	PIPO/AGSP	Favorable	---	Pacific monardella	5	
		Normal	---	Saskatoon serviceberry	1	
		Unfavorable	---	Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	55	
				Common yarrow	5	
				Other annual forbs	3	
				Other perennial forbs	5	
				Other shrubs	5	
				Silky lupine	5	
439:						
Spokane	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	1	
				Common snowberry	40	
				Common yarrow	1	
				Low Oregongrape	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
440:						
Spokane	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	1	
				Common snowberry	40	
				Common yarrow	1	
				Low Oregongrape	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
441:						
Spokane	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	1	
				Common snowberry	40	
				Common yarrow	1	
				Low Oregongrape	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
442:						
Spokane	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	10	
				Common yarrow	5	
				Other annual forbs	2	
				Other perennial forbs	15	
				Other perennial grasses	2	
				Other shrubs	2	
				Silky lupine	10	
443:						
Spokane	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	10	
				Common yarrow	5	
				Other annual forbs	2	
				Other perennial forbs	15	
				Other perennial grasses	2	
				Other shrubs	2	
				Silky lupine	10	
444:						
Spokane	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	1	
				Common snowberry	40	
				Common yarrow	1	
				Low Oregongrape	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
Rock outcrop.						
445:						
Spokane	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	10	
				Bluebunch wheatgrass	1	
				Common snowberry	40	
				Common yarrow	1	
				Low Oregongrape	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	15	
				Silky lupine	5	
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
446:						
Spokane	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	10	
				Common yarrow	5	
				Other annual forbs	2	
				Other perennial forbs	15	
				Other perennial grasses	2	
				Other shrubs	2	
				Silky lupine	10	
Skanid	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	5	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
447:						
Spokane	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	10	
				Common yarrow	5	
				Other annual forbs	2	
				Other perennial forbs	15	
				Other perennial grasses	2	
				Other shrubs	2	
				Silky lupine	10	
Skanid	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	5	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
448:						
Spokane	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	15	
		Normal	---	Saskatoon serviceberry	2	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	6	
				Bluebunch wheatgrass	10	
				Common yarrow	5	
				Other annual forbs	2	
				Other perennial forbs	15	
				Other perennial grasses	2	
				Other shrubs	2	
				Silky lupine	10	
Skanid	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Ross' sedge	1	
		Unfavorable	---	Sandberg bluegrass	5	
				Saskatoon serviceberry	1	
				Wyeth buckwheat	5	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	5	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Silky lupine	10	
449:						
Springdale	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	8	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Prairie Junegrass	5	
				Silky lupine	6	
				White spirea	6	
				White stoneseed	5	
450:						
Springdale	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	8	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Prairie Junegrass	5	
				Silky lupine	6	
				White spirea	6	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
451:						
Springdale------	PIPO/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Arrowleaf balsamroot	5	
				Baldhip rose	5	
				Bluebunch wheatgrass	8	
				Common chokecherry	5	
				Common snowberry	25	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Prairie Junegrass	5	
				Silky lupine	6	
				White spirea	6	
				White stoneseed	5	
452:						
Stapaloop-------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	20	
				Hook violet	5	
				Kinnikinnick	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Spreading dogbane	5	
				Sticky geranium	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	15	
				White stoneseed	5	
453:						
Stapaloop-------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	20	
				Hook violet	5	
				Kinnikinnick	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Spreading dogbane	5	
				Sticky geranium	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	15	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
454:						
Stapaloop-------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	20	
				Hook violet	5	
				Kinnikinnick	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Spreading dogbane	5	
				Sticky geranium	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	15	
				White stoneseed	5	
455:						
Stepstone-------	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Feather Solomon's seal	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Sidebells shinleaf	5	
				Silky lupine	5	
				White spirea	5	
456:						
Stepstone-------	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Feather Solomon's seal	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Sidebells shinleaf	5	
				Silky lupine	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
457:						
Stepstone-------	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Feather Solomon's seal	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Sidebells shinleaf	5	
				Silky lupine	5	
				White spirea	5	
458:						
Stepstone-------	PSME/CARU,ARUV	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Scouler's willow	5	
		Unfavorable	---	Baldhip rose	5	
				Blue huckleberry	5	
				Feather Solomon's seal	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Kinnikinnick	5	
				Longtube twinflower	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Sidebells shinleaf	5	
				Silky lupine	5	
				White spirea	5	
459:						
Stevens---------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Feather Solomon's seal	5	
				Hook violet	5	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Sticky geranium	5	
				Sweetcicely	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
460:						
Stevens	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Feather Solomon's seal	5	
				Hook violet	5	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Sticky geranium	5	
				Sweetcicely	5	
				White stoneseed	5	
461:						
Stevens	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Feather Solomon's seal	5	
				Hook violet	5	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Sticky geranium	5	
				Sweetcicely	5	
				White stoneseed	5	
462:						
Stevens	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Blue wildrye	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Feather Solomon's seal	5	
				Hook violet	5	
				Houndstongue hawkweed	5	
				Low Oregongrape	5	
				Northern bedstraw	5	
				Pinegrass	5	
				Sticky geranium	5	
				Sweetcicely	5	
				White stoneseed	5	
463:						
Strat	SANDY 9-15 PZ	Favorable	750	Sandberg bluegrass		10
		Normal	600	Thurber needlegrass		20
		Unfavorable	400	Antelope bitterbrush		1
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		40
				Buckwheat		5
				Gray rabbitbrush		2
				Needleandthread		5
				Pricklypear		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
464:						
Stubblefield----	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
465:						
Swakane---------	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
466:						
Swakane---------	STONY 9-15 PZ	Favorable	750	Cusick's bluegrass		5
		Normal	600	Sandberg bluegrass		10
		Unfavorable	300	Thurber needlegrass		5
				Antelope bitterbrush		5
				Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		55
				Buckwheat		5
				Lupine		3
				Threadleaf sedge		5
				Wax currant		2
Rock outcrop.						
467:						
Swakane---------	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
Rock outcrop.						
468:						
Swipkin---------	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	1	
				Common snowberry	50	
				Common yarrow	1	
				Low Oregongrape	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	10	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
469:						
Swipkin	PSME/SYAL	Favorable	---	Idaho fescue	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	1	
				Common snowberry	50	
				Common yarrow	1	
				Low Oregongrape	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	1	
				Pinegrass	10	
				Silky lupine	5	
470:						
Thout	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	6	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Bush penstemon	5	
				Common chokecherry	6	
				Common gailardia	5	
				Common snowberry	25	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Narrowleaf mountaintrumpet	5	
				Pinegrass	6	
				Silky lupine	6	
				White hawkweed	5	
471:						
Thout	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	6	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Bush penstemon	5	
				Common chokecherry	6	
				Common gailardia	5	
				Common snowberry	25	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Narrowleaf mountaintrumpet	5	
				Pinegrass	6	
				Silky lupine	6	
				White hawkweed	5	
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
472:						
Thout	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	6	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Bush penstemon	5	
				Common chokecherry	6	
				Common gailardia	5	
				Common snowberry	25	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Narrowleaf mountaintrumpet	5	
				Pinegrass	6	
				Silky lupine	6	
				White hawkweed	5	
Rock outcrop.						
473:						
Thout	PSME/SYAL	Favorable	---	Lewis' mockorange	5	
		Normal	---	Saskatoon serviceberry	6	
		Unfavorable	---	Baldhip rose	5	
				Bluebunch wheatgrass	5	
				Bush penstemon	5	
				Common chokecherry	6	
				Common gailardia	5	
				Common snowberry	25	
				Common yarrow	5	
				Creambush oceanspray	5	
				Low Oregongrape	6	
				Narrowleaf mountaintrumpet	5	
				Pinegrass	6	
				Silky lupine	6	
				White hawkweed	5	
Rock outcrop.						
474:						
Timentwa	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
475:						
Timentwa	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
476:						
Timentwa	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
477:						
Timentwa	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Timentwa	COOL LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	1,000	Idaho fescue		50
		Unfavorable	800	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Buckwheat		2
				Fleabane		2
				Lupine		3
				Threetip sagebrush		5
478:						
Timentwa	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Timentwa	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
479:						
Timentwa	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
479:						
Bakeoven--------	VERY SHALLOW 9-15 PZ	Favorable	250	Hood's phlox		5
		Normal	200	Hooker's balsamroot		5
		Unfavorable	150	Sandberg bluegrass		30
				Bitterroot		2
				Bluebunch wheatgrass		5
				Bottlebrush squirreltail		5
				Narrowleaf goldenweed		5
				Rock buckwheat		5
				Stiff sagebrush		20
				Thymeleaf buckwheat		10
Rock outcrop.						
480:						
Togo----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	20	
				Common snowberry	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	5	
481:						
Togo----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	20	
				Common snowberry	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	5	
482:						
Togo----------	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	20	
				Common snowberry	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
483:						
Togo	ABALA2/CARU	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	5	
				Pinegrass	35	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	5	
484:						
Togo	ABLA2/VACCI	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Blue huckleberry	20	
				Common snowberry	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Myrtle pachystima	15	
				Pinegrass	5	
				Raceme pussytoes	5	
				Sidebells shinleaf	5	
				Silky lupine	5	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				White hawkweed	5	
				White spirea	5	
Rock outcrop.						
485:						
Torboy	PSME/CARU,ARUV	Favorable	---	Ross' sedge	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Virginia strawberry	5	
				Baldhip rose	5	
				Common yarrow	5	
				Feather Solomon's seal	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Prairie Junegrass	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
486:						
Torboy----------	PSME/CARU,ARUV	Favorable	---	Ross' sedge	5	
		Normal	---	Saskatoon serviceberry	5	
		Unfavorable	---	Virginia strawberry	5	
				Baldhip rose	5	
				Common yarrow	5	
				Feather Solomon's seal	5	
				Fireweed	5	
				Heartleaf arnica	5	
				Kinnikinnick	5	
				Myrtle pachystima	5	
				Pinegrass	30	
				Prairie Junegrass	5	
				Silky lupine	5	
				White hawkweed	5	
				White spirea	5	
487:						
Torrifluventic Haploxerolls---	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
488:						
Tunkcreek-------	ABLA2/LIBO2	Favorable	---	Ross' sedge	3	
		Normal	---	Dwarf huckleberry	10	
		Unfavorable	---	Kinnikinnick	5	
				Longtube twinflower	15	
				Myrtle pachystima	30	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	10	
				Sidebells shinleaf	5	
				Western rattlesnake plantain	5	
				White spirea	5	
489:						
Tunkcreek-------	ABLA2/LIBO2	Favorable	---	Ross' sedge	3	
		Normal	---	Dwarf huckleberry	10	
		Unfavorable	---	Kinnikinnick	5	
				Longtube twinflower	15	
				Myrtle pachystima	30	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	1	
				Other shrubs	5	
				Pinegrass	10	
				Sidebells shinleaf	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
490:						
Tyee	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
491:						
Tyee	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
492:						
Tyee	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
493:						
Tyee	COOL STONY 9-15 PZ	Favorable	1,000	Cusick's bluegrass		5
		Normal	800	Idaho fescue		60
		Unfavorable	500	Sandberg bluegrass		5
				Bluebunch wheatgrass		20
				Lupine		3
				Prairie Junegrass		2
Morical	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2
Tyee	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
494:						
Tyee	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
Rock outcrop.						

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
495:						
Tyee	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
Rock outcrop.						
496:						
Typic Haplaquolls	WET MEADOW 9-15 PZ	Favorable	---	Baltic rush		5
		Normal	---	Nebraska sedge		10
		Unfavorable	---	Beaked sedge		20
				Bearded wheatgrass		5
				Bluegrass		5
				Bluejoint		5
				Cinquefoil		5
				Largeleaf avens		5
				Mannagrass		5
				Meadow barley		5
				Mint		5
				Northern reedgrass		5
				Other perennial grasslikes		5
				Tufted hairgrass		15
				Water sedge		10
				Willow		1
497:						
Typic Xerorthents	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Black hawthorn	20	
		Unfavorable	---	Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	35	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	5	
				Other shrubs	1	
				Rose	5	
				Tall Oregongrape	5	
				Woodland strawberry	2	
Typic Xerochrepts	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Antelope bitterbrush	5	
		Unfavorable	---	Black hawthorn	10	
				Bluebunch wheatgrass	5	
				Common chokecherry	5	
				Common snowberry	30	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	5	
				Other perennial grasses	5	
				Other shrubs	1	
				Rose	10	
				Smooth sumac	10	
				Woodland strawberry	1	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
498:						
Ultic Haploxerolls---	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Arrowleaf balsamroot	5	
		Unfavorable	---	Baldhip rose	5	
				Black hawthorn	5	
				Blue wildrye	5	
				Common chokecherry	6	
				Common snowberry	25	
				Heartleaf arnica	5	
				Houndstongue hawkweed	5	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Tall Oregongrape	5	
				White spirea	9	
499:						
Uncas----------	DECIDUOUS	Favorable	---	Woods' rose	10	
		Normal	---	Black hawthorn	5	
		Unfavorable	---	Blue wildrye	5	
				Common snowberry	50	
				Largeleaf avens	5	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other perennial grasslikes	1	
				Other shrubs	5	
				Redosier dogwood	5	
				Reed canarygrass	1	
				Starry false Solomon's seal	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				Western meadowrue	5	
500:						
Vanbrunt--------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	3	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	1	
				Silky lupine	5	
Rock outcrop.						
501:						
Vanbrunt--------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	3	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	1	
				Silky lupine	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
501:						
Rock outcrop.						
502:						
Vanbrunt--------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	20	
		Normal	---	Saskatoon serviceberry	3	
		Unfavorable	---	Antelope bitterbrush	30	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	15	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	5	
				Other shrubs	1	
				Silky lupine	5	
Rock outcrop.						
503:						
Wannacott-------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
504:						
Wannacott-------	LOAMY 9-15 PZ	Favorable	1,200	Cusick's bluegrass		5
		Normal	900	Sandberg bluegrass		10
		Unfavorable	700	Thurber needlegrass		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Fleabane		3
				Gray rabbitbrush		3
				Lupine		2
				Milkvetch		2
				Threetip sagebrush		5
505:						
Wapal----------	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White hawkweed	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
506:						
Wapal	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White hawkweed	5	
				White stoneseed	5	
507:						
Wapal	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White hawkweed	5	
				White stoneseed	5	
508:						
Wapal	PSME/SYAL	Favorable	---	Saskatoon serviceberry	5	
		Normal	---	Baldhip rose	5	
		Unfavorable	---	Blue wildrye	5	
				Common chokecherry	5	
				Common snowberry	30	
				Creambush oceanspray	5	
				Feather Solomon's seal	5	
				Hook violet	5	
				Low Oregongrape	5	
				Pinegrass	5	
				Spike trisetum	5	
				Sweetcicely	5	
				Sweetscented bedstraw	5	
				White hawkweed	5	
				White stoneseed	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
509:						
Wellscreek------	PSME/PHMA,ARCO	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	5	
				Common snowberry	10	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
510:						
Wellscreek------	PSME/PHMA,ARCO	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	5	
				Common snowberry	10	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	
511:						
Wellscreek------	PSME/PHMA,ARCO	Favorable	---	Colombian brome	5	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Ross' sedge	5	
				Baldhip rose	5	
				Common snowberry	10	
				Creambush oceanspray	10	
				Feather Solomon's seal	5	
				Mallow ninebark	20	
				Myrtle pachystima	5	
				Pinegrass	5	
				Roundleaf alumroot	5	
				Sweetcicely	5	
				Western fescue	5	
				Western rattlesnake plantain	5	
				White spirea	5	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
512:						
Whitestone------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	6	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	1	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	35	
				Common yarrow	5	
				Fernleaf biscuitroot	1	
				Longleaf fleabane	1	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other shrubs	1	
				Silky lupine	5	
				Whitestem elkweed	1	
513:						
Whitestone------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	6	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	1	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	35	
				Common yarrow	5	
				Fernleaf biscuitroot	1	
				Longleaf fleabane	1	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other shrubs	1	
				Silky lupine	5	
				Whitestem elkweed	1	
514:						
Whitestone------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	6	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	1	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	35	
				Common yarrow	5	
				Fernleaf biscuitroot	1	
				Longleaf fleabane	1	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other shrubs	1	
				Silky lupine	5	
				Whitestem elkweed	1	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
515:						
Whitestone------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	6	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	1	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	35	
				Common yarrow	5	
				Fernleaf biscuitroot	1	
				Longleaf fleabane	1	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other shrubs	1	
				Silky lupine	5	
				Whitestem elkweed	1	
516:						
Whitestone------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	6	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	1	
				Antelope bitterbrush	30	
				Arrowleaf balsamroot	10	
				Bluebunch wheatgrass	35	
				Common yarrow	5	
				Fernleaf biscuitroot	1	
				Longleaf fleabane	1	
				Other annual forbs	1	
				Other perennial forbs	1	
				Other shrubs	1	
				Silky lupine	5	
				Whitestem elkweed	1	
Rock outcrop.						
517:						
Wilmont---------	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Bride's bonnet	2	
				Creambush oceanspray	10	
				Longtube twinflower	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	7	
				Pinegrass	6	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	7	

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
518:						
Wilmont	PSME/PHMA	Favorable	---	Colombian brome	5	
		Normal	---	Utah honeysuckle	5	
		Unfavorable	---	Baldhip rose	5	
				Bride's bonnet	2	
				Creambush oceanspray	10	
				Longtube twinflower	5	
				Low Oregongrape	5	
				Mallow ninebark	25	
				Myrtle pachystima	7	
				Pinegrass	6	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	7	
519:						
Wilmont	ABGR/LIBO2	Favorable	---	Colombian brome	6	
		Normal	---	Utah honeysuckle	6	
		Unfavorable	---	Baldhip rose	10	
				Bride's bonnet	6	
				Creambush oceanspray	8	
				Longtube twinflower	5	
				Low Oregongrape	5	
				Mallow ninebark	9	
				Myrtle pachystima	15	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
520:						
Wilmont	ABGR/LIBO2	Favorable	---	Colombian brome	6	
		Normal	---	Utah honeysuckle	6	
		Unfavorable	---	Baldhip rose	10	
				Bride's bonnet	6	
				Creambush oceanspray	8	
				Longtube twinflower	5	
				Low Oregongrape	5	
				Mallow ninebark	9	
				Myrtle pachystima	15	
				Pinegrass	5	
				Roughfruit fairybells	5	
				Sidebells shinleaf	5	
				Western rattlesnake plantain	5	
				White hawkweed	5	
				White spirea	5	
521:						
Winchester	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
522:						
Winchester-------	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
523:						
Winchester-------	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
524:						
Winchester-------	SANDS 9-15 PZ	Favorable	850	Indian ricegrass		30
		Normal	700	Antelope bitterbrush		15
		Unfavorable	450	Biscuitroot		5
				Bluebunch wheatgrass		10
				Buckwheat		5
				Gray rabbitbrush		5
				Needleandthread		30
Rock outcrop.						
525:						
Winthrop---------	PIPO/PUTR,FEID	Favorable	---	Idaho fescue	35	
		Normal	---	Sandberg bluegrass	1	
		Unfavorable	---	Saskatoon serviceberry	1	
				Wyeth buckwheat	1	
				Antelope bitterbrush	5	
				Arrowleaf balsamroot	5	
				Bluebunch wheatgrass	25	
				Common yarrow	5	
				Other annual forbs	1	
				Other perennial forbs	10	
				Other perennial grasses	1	
				Silky lupine	10	
526:						
Wynhoff----------	DRY LOAMY 9-15 PZ	Favorable	900	Cusick's bluegrass		5
		Normal	750	Sandberg bluegrass		10
		Unfavorable	600	Thurber needlegrass		3
				Arrowleaf balsamroot		2
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		2
				Fleabane		2
				Gray rabbitbrush		2
				Longleaf phlox		2
				Lupine		2
				Milkvetch		2

Table 7.--Ecological Site Productivity and Characteristic Plant Communities--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic vegetation	Composition	
		Kind of year	Dry weight		Forest	Range
			Lb/acre		*Pct*	*Pct*
527:						
Wynhoff---------	DRY STONY 9-15 PZ	Favorable	550	Sandberg bluegrass		10
		Normal	450	Thurber needlegrass		5
		Unfavorable	300	Arrowleaf balsamroot		5
				Big sagebrush		5
				Bluebunch wheatgrass		60
				Buckwheat		5
528:						
Xeric Torriorthents--	NOT APPLICABLE	Favorable	---			
		Normal	---			
		Unfavorable	---			
529:						
Xeric Torriorthents--	NOT APPLICABLE	Favorable	---			
		Normal	---			
		Unfavorable	---			
530:						
Xerochrepts-----	PSME/PHMA,ARCO	Favorable	---	Lewis' mockorange	10	
		Normal	---	Rocky Mountain maple	5	
		Unfavorable	---	Saskatoon serviceberry	5	
				Woods' rose	5	
				Bluebunch wheatgrass	5	
				Common chokecherry	4	
				Common snowberry	30	
				Common yarrow	5	
				Creambush oceanspray	10	
				Low Oregongrape	5	
				Mallow ninebark	5	
				Other perennial forbs	5	
				White spirea	5	
				Willow	1	
Rubble land.						
Rock outcrop.						
531:						
Water.						
532:						
Dam.						

Table 8.--Forest Operability

(Only the soils that support woodland vegetation are rated.)

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
6:						
Aits	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
7:						
Aits	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
8:						
Aits	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
10:						
Andic Cryaquepts	Severe: seasonal high water table, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
14:						
Apex	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
15:						
Apex	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
16:						
Apex	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
17:						
Apex	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
18:						
Apex	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
19:						
Apex	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate
20:						
Aquic Xerofluvents	Severe: seasonal high water table, snowpack, muddy conditions caused by seasonal soil wetness	Moderate to severe	Slight to moderate	Moderate to severe	Stable	Moderate
21:						
Aquic Xerofluvents	Severe: seasonal high water table, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Severe	Stable	Moderate
22:						
Aquic Xerofluvents	Severe: seasonal high water table, muddy conditions caused by seasonal soil wetness	Moderate to severe	Slight to moderate	Moderate to severe	Stable	Moderate
29:						
Baldknob	Moderate: Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Stable	Severe
Thout	Moderate: Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Moderate
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
30:						
Baldknob	Severe: Rock outcrop, steepness of slope, snowpack	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
Thout	Severe: Rock outcrop, steepness of slope, snowpack	Moderate	Moderate	Moderate	Surficial landslides, soil creep	Severe
Rock outcrop.						
31:						
Barnellcreek	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Slight
32:						
Bearspring	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
33:						
Bearspring	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Surficial landslides, soil creep	Slight
34:						
Bernhill	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Stable	Moderate
35:						
Bernhill	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate		Moderate
37:						
Bisbee	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Severe
38:						
Bisbee	Moderate: steepness of slope, loose surface layer when dry	Slight	Slight	Severe	Stable	Severe

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
39:						
Boesel	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
40:						
Bong	Moderate: steepness of slope in some areas	Moderate	Slight	Moderate	Stable	Moderate
41:						
Bong	Severe: steepness of slope	Moderate	Slight	Moderate	Surficial landslides, soil creep	Moderate
42:						
Bong	Slight: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
47:						
Bossburg	Severe: seasonal high water table, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Slight
50:						
Brusher	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
51:						
Brusher	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Slight
52:						
Brusher	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
53:						
Brusher	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
54:						
Buhrig	Severe: surface stones, steepness of slope, snowpack	Moderate	Slight	Slight	Stable	Moderate
55:						
Buhrig	Severe: surface stones, steepness of slope, snowpack	Moderate	Slight	Slight	Surficial landslides, soil creep	Moderate
56:						
Buhrig	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
57:						
Buhrig	Severe: surface stones, steepness of slope, Rock outcrop, snowpack	Moderate	Slight	Slight	Stable	Moderate
Rock outcrop.						
58:						
Buhrig	Severe: surface stones, Rock outcrop, steepness of slope	Moderate	Slight	Slight	Surficial landslides, soil creep	Moderate
Rock outcrop.						
59:						
Canteen	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
60:						
Canteen	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
61:						
Canteen	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
62:						
Canteen	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
63:						
Capoose	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
64:						
Capoose	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
65:						
Capoose	Moderate: Rock outcrop, steepness of slope, snowpack	Severe	Severe	Severe	Stable	Moderate
Rock outcrop.						
66:						
Capoose	Severe: Rock outcrop, steepness of slope, snowpack	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
Rock outcrop.						
73:						
Cedonia	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate
74:						
Cedonia	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate
75:						
Cedonia	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
76:						
Cedonia	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Deep-seated landslides, soil creep	Moderate
77:						
Centralpeak	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
Centralpeak	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
78:						
Centralpeak	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
Centralpeak	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
79:						
Centralpeak	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate
Centralpeak	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate
80:						
Centralpeak	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
81:						
Centralpeak	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
82:						
Centralpeak	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate
83:						
Centralpeak	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
Brusher	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Slight
84:						
Centralpeak	Severe: Rock outcrop, steepness of slope, snowpack	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate
Centralpeak	Severe: Rock outcrop, steepness of slope, snowpack	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate
Rock outcrop.						
85:						
Chumstick	Severe: surface stones, Rock outcrop, snowpack	Slight	Slight	Slight	Stable	Moderate
Rock outcrop.						
86:						
Chumstick	Severe: surface stones, Rock outcrop, steepness of slope	Slight	Slight	Slight	Stable	Severe
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
87:						
Codylake	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Stable	Moderate
88:						
Codylake	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Stable	Moderate
89:						
Codylake	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Surficial landslides, soil creep	Moderate
104:						
Coxlake	Severe: seasonal high water table, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
105:						
Cryofluvents	Severe: seasonal high water table, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
106:						
Cubcreek	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
108:						
Dart	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
109:						
Dart	Severe: steepness of slope, loose surface	Slight	Slight	Severe	Surficial landslides, soil creep	Severe
110:						
Dart	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
110:						
Springdale	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
111:						
Dart	Severe: steepness of slope, loose surface layer when dry	Slight	Slight	Severe	Surficial landslides, soil creep	Severe
Springdale	Severe: steepness of slope, loose surface layer when dry	Slight	Slight	Severe	Surficial landslides, soil creep	Severe
112:						
Dehart	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Stable	Severe
113:						
Dehart	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Surficial landslides, soil creep	Severe
114:						
Dehart	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Surficial landslides, soil creep	Severe
Phoebe	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Moderate
115:						
Dehart	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Stable	Severe
Rock outcrop.						
116:						
Dehart	Severe: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Surficial landslides, soil creep	Severe
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
117:						
Dinkelman	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
118:						
Dinkelman	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
119:						
Dinkelman	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Surficial landslides, soil creep	Slight
124:						
Donavan	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Slight
125:						
Donavan	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Slight
126:						
Donavan	Moderate: surface boulders, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Slight
127:						
Donavan	Moderate: surface boulders, steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Moderate
128:						
Donavan	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
129:						
Donavan	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
130:						
Donavan	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Surficial landslides, soil creep	Moderate
131:						
Donavan	Moderate: surface boulders, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
132:						
Donavan	Moderate: surface boulders, steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Moderate
133:						
Donavan	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
Goldlake	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
134:						
Donavan	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
Northstar	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Moderate
135:						
Donavan	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Slight
Rock outcrop.						
136:						
Donavan	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
137:						
Donavan	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
Rock outcrop.						
138:						
Donavan	Moderate: Rock outcrop, steepness of slope	Moderate	Moderate	Moderate	Stable	Moderate
Rock outcrop.						
140:						
Elbowlake	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
141:						
Elbowlake	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
142:						
Elbowlake	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Surficial landslides, soil creep	Moderate
143:						
Elbowlake	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
144:						
Elbowlake	Moderate: steepness of slope, snowpack	Severe	Severe	Moderate	Stable	Moderate
145:						
Elbowlake	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Surficial landslides, soil creep	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
155:						
Ewall	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
156:						
Ewall	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
169:						
Friedlander	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
170:						
Friedlander	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
171:						
Friedlander	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
172:						
Garrison	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
173:						
Garrison	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
174:						
Garrison	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
175:						
Georgecreek	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
176:						
Georgecreek	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
177:						
Georgecreek	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
178:						
Georgecreek	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate
187:						
Glenrose	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
188:						
Glenrose	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
189:						
Goddard	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
190:						
Goddard	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
191:						
Goddard	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
192:						
Goldlake	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
194:						
Growden	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness, snowpack	Severe	Severe	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
199:						
Hallcreek	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Slight
201:						
Hartill	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
202:						
Hartill	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
203:						
Hellgate	Slight: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
204:						
Hellgate	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
205:						
Henneway	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
206:						
Henneway	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
207:						
Henneway	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
212:						
Hodgson	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
213:						
Hodgson	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
214:						
Hodgson	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
215:						
Hodgson	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Deep-seated landslides, soil creep	Slight
216:						
Hudnut	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
217:						
Hudnut	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
218:						
Hunters	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
220:						
Inchelium	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
221:						
Inchelium	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
222:						
Inkler	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
223:						
Inkler	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
224:						
Inkler	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Surficial landslides, soil creep	Moderate
225:						
Inkler	Moderate: Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
Baldknob	Moderate: Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Stable	Severe
Rock outcrop.						
226:						
Inkler	Severe: steepness of slope, Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Surficial landslides, soil creep	Moderate
Baldknob	Severe: steepness of slope, Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
Rock outcrop.						
227:						
Inkler	Moderate: Rock outcrop, steepness of slope, snowpack	Severe	Severe	Moderate	Stable	Moderate
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
228:						
Inkler	Severe: Rock outcrop, steepness of slope, snowpack	Severe	Severe	Moderate	Surficial landslides, soil creep	Moderate
Rock outcrop.						
229:						
Jimcreek	Moderate: seasonal high water table, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
231:						
Karamin	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
232:						
Karamin	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
233:						
Karamin	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Moderate
234:						
Kartar	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Severe	Stable	Moderate
235:						
Kellerbutte	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
236:						
Kellerbutte	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
237:						
Kenotrail	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate
238:						
Kewach	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
239:						
Kewach	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
240:						
Kewach	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
241:						
Kewach	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Deep-seated landslides, soil creep	Slight
242:						
Kiehl	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
243:						
Kiehl	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
244:						
Kiehl	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
245:						
Kiehl	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
246:						
Kiehl	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
247:						
Kiehl	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
248:						
Koepke	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Stable	Slight
249:						
Lakesol	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Deep-seated landslides, soil creep	Slight
253:						
Loony	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
254:						
Lostcreek	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
255:						
Louiecreek	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
256:						
Louploup	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
257:						
Louploup	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
258:						
Lynxcreek	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Surficial landslides	Moderate
267:						
Manley	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
268:						
Manley	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
269:						
Manley	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
270:						
Manley	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
Codylake	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
271:						
Manley	Moderate: steepness of slope, snowpack, Rock outcrop	Severe	Severe	Severe	Stable	Moderate
Rock outcrop.						
272:						
Manley	Severe: steepness of slope, snowpack, Rock outcrop	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
Rock outcrop.						
273:						
Martella	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
274:						
Martella	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
275:						
Martella	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
276:						
Medisaprists	Severe: prolonged seasonal high water table, muddy conditions caused by seasonal soil wetness	Severe	Severe	Moderate	Stable	Moderate
277:						
Merkel	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
278:						
Merkel	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Severe

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
279:						
Merkel	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
280:						
Merkel	Moderate: snowpack, surface boulders, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
281:						
Merkel	Moderate: steepness of slope, snowpack, surface boulders	Moderate	Slight	Moderate	Stable	Severe
282:						
Mineral	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Stable	Moderate
283:						
Mineral	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Surficial landslides, soil creep	Severe
284:						
Mineral	Moderate: surface stones, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
Rock outcrop.						
285:						
Mineral	Moderate: surface stones, steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Severe
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
286:						
Mineral	Severe: surface stones, steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
Rock outcrop.						
287:						
Mineral	Severe: surface stones, steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Moderate
Rock outcrop.						
288:						
Mitchellpoint	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
293:						
Moscow	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
294:						
Moscow	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
295:						
Moses	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
296:						
Moses	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
297:						
Moses	Severe: surface boulders, steepness of slope, snowpack	Moderate	Moderate	Severe	Surficial landslides, soil creep landslides,	Severe
298:						
Moses	Severe: surface boulders, snowpack, steepness of slope in some areas	Moderate	Moderate	Severe	Stable	Severe
299:						
Narcisse	Moderate: muddy conditions caused by seasonal soil wetness, seasonal high water table	Severe	Severe	Slight	Stable	Slight
300:						
Narcisse	Moderate: muddy conditions caused by seasonal soil wetness, seasonal high water table	Severe	Severe	Slight	Stable	Slight
305:						
Neuske	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate
306:						
Neuske	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate
307:						
Nevine	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
Nevine	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
308:						
Nevine	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
Nevine	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
309:						
Nevine	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
Nevine	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
310:						
Nevine	Moderate: steepness of slope, snowpack, Rock outcrop	Severe	Severe	Severe	Stable	Moderate
Nevine	Moderate: steepness of slope, snowpack, Rock outcrop	Severe	Severe	Severe	Stable	Moderate
Rock outcrop.						
311:						
Nevine	Severe: steepness of slope, snowpack, Rock outcrop	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
Nevine	Severe: steepness of slope, snowpack, Rock outcrop	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
Rock outcrop.						
312:						
Newbell	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
313:						
Newbell	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
314:						
Newbell	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
315:						
Northstar	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Moderate
316:						
Northstar	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Surficial landslides, soil creep	Severe
317:						
Northstar	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Severe
Johntom	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Severe
Rock outcrop.						
318:						
Northstar	Severe: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Surficial landslides, soil creep	Severe
Johntom	Severe: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Surficial landslides, soil creep	Severe
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
319:						
Northstar	Moderate: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Severe
Louiecreek	Moderate: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Moderate
Rock outcrop.						
320:						
Northstar	Severe: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Surficial landslides, soil creep	Severe
Louiecreek	Severe steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Severe	Slight	Moderate	Surficial landslides, soil creep	Severe
Rock outcrop.						
321:						
Northstar	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Moderate
Rock outcrop.						
322:						
Ohscow	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
323:						
Ohscow	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
324:						
Ohscow	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
325:						
Ohscow	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
327:						
Omak	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
331:						
Oxerine	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
332:						
Oxerine	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
333:						
Oxerine	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Deep-seated landslides, soil creep	Moderate
334:						
Oxerine	Moderate: Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
Rock outcrop.						
335:						
Oxerine	Severe: steepness of slope, snowpack, Rock outcrop	Severe	Moderate	Severe	Deep-seated landslides, soil creep	Moderate
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
336:						
Parmenter	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
337:						
Parmenter	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe		Moderate
338:						
Parmenter	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
339:						
Parmenter	Moderate: surface boulders, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
343:						
Phoebe	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
344:						
Phoebe	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
345:						
Phoebe	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
346:						
Phoebe	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Slight
347:						
Phoebe	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
348:						
Phoebe	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
349:						
Phoebe	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Slight
350:						
Phoebe	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
Dehart	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Slight	Stable	Severe
361:						
Quincy	Moderate: steepness of slope, loose surface layer when dry	Slight	Slight	Severe	Soil creep	Severe
368:						
Raisio	Severe: steepness of slope	Slight	Slight	Slight	Deep-seated landslides, soil creep	Severe
369:						
Raisio	Moderate: steepness of slope, Rock outcrop	Slight	Slight	Slight	Stable	Severe
Rock outcrop.						
370:						
Raisio	Moderate: muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Stable	Moderate
Rufus	Moderate: muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Stable	Moderate
371:						
Raisio	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
371:						
Rufus	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
372:						
Raisio	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
Rufus	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
373:						
Raisio	Severe: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
Rufus	Severe: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
Rock outcrop.						
376:						
Ralsen	Severe: seasonal high water table, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
378:						
Reardan	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
379:						
Reardan	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
382:						
Renha	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
383:						
Renha	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
384:						
Renha	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
Oxerine	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
385:						
Republic	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
386:						
Republic	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
387:						
Republic	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Surficial landslides, soil creep	Slight
388:						
Resner	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
389:						
Resner	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Moderate	Stable	Moderate
390:						
Ret	Severe: snowpack, seasonal high water table	Severe	Severe	Slight	Stable	Slight
393:						
Rock outcrop.						
Chumstick	Severe: Rock outcrop, steepness of slope, surface stones and boulders	Slight	Slight	Slight	Stable	Severe
394:						
Rock outcrop.						
Chumstick	Severe: Rock outcrop, steepness of slope, surface stones and boulders	Slight	Slight	Slight	Stable	Severe
395:						
Rock outcrop.						
Mineral	Severe: surface stones, outcrop, steepness of slope, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
396:						
Rock outcrop.						
Rufus	Severe: Rock outcrop, steepness of slope, muddy conditions caused by seasonal soil wetness	Slight	Slight	Slight	Surficial landslides, soil creep	Severe
399:						
Rock outcrop.						
Vanbrunt	Severe: Rock outcrop, steepness of slope, surface stones and boulders	Moderate	Slight	Slight	Soil creep	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
405:						
Sacheen	Moderate: steepness of slope, loose surface layer when dry	Slight	Slight	Severe	Stable	Severe
406:						
Sacheen	Severe: steepness of slope, loose surface layer when dry	Slight	Slight	Severe	Surficial landslides, soil creep	Severe
407:						
Sacheen	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Severe
408:						
Sanpoil	Severe: seasonal high water table, muddy conditions caused by seasonal soil wetness, snowpack	Severe	Severe	Slight	Stable	Slight
409:						
Sanpoil	Severe: seasonal ponded water table, muddy conditions caused by prolonged soil wetness, snowpack	Severe	Severe	Slight	Stable	Slight
410:						
Scala	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Moderate
411:						
Sclome	Severe: seasonal high water table, muddy conditions caused by seasonal soil wetness, snowpack	Severe	Severe	Slight	Stable	Slight
412:						
Scoap	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
413:						
Scoap	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
414:						
Scoap	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Surficial landslides, soil creep	Slight
415:						
Scoap	Moderate: Rock outcrop, steepness of slope, snowpack	Severe	Moderate	Slight	Stable	Slight
Rock outcrop.						
416:						
Scoap	Severe: Rock outcrop, steepness of slope, snowpack	Severe	Moderate	Slight	Surficial landslides, soil creep	Slight
Rock outcrop.						
417:						
Scrabblers	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
418:						
Scrabblers	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
419:						
Scrabblers	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
420:						
Scrabblers	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
421:						
Sitdown	Severe: steepness of slope, snowpack, conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
428:						
Skanid	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
429:						
Skanid	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Severe
430:						
Skanid	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
431:						
Skanid	Slight: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
432:						
Skanid	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Severe
433:						
Skanid	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
434:						
Skanid	Moderate: Rock outcrop, steepness of slope	Moderate	Slight	Moderate	Stable	Severe
Rock outcrop.						
435:						
Skanid	Severe: Rock outcrop, steepness of slope	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
Rock outcrop.						
436:						
Skanid	Severe: steepness of slope, Rock outcrop	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
437:						
Spens	Severe: steepness of slope, loose surface layer when dry, surface stones	Slight	Slight	Severe	Stable	Severe
438:						
Spens	Severe: steepness of slope, loose surface layer when dry, surface stones	Slight	Slight	Severe	Surficial landslides, soil creep	Severe
439:						
Spokane	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
440:						
Spokane	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Moderate
441:						
Spokane	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Surficial landslides, soil creep	Moderate
442:						
Spokane	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Moderate
443:						
Spokane	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Surficial landslides, soil creep	Moderate
444:						
Spokane	Moderate: Rock outcrop, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Moderate
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
445:						
Spokane	Moderate: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Moderate
Rock outcrop.						
446:						
Spokane	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
Skanid	Slight: muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
447:						
Spokane	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
Skanid	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Severe
448:						
Spokane	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
Skanid	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Severe
449:						
Springdale	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
450:						
Springdale	Moderate: loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
451:						
Springdale	Severe: steepness of slope, loose surface layer when dry	Slight	Slight	Severe	Surficial landslides, soil creep	Severe

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
452:						
Stapaloop	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
453:						
Stapaloop	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
454:						
Stapaloop	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
455:						
Stepstone	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
456:						
Stepstone	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Stable	Moderate
457:						
Stepstone	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Severe	Surficial landslides, soil creep	Moderate
458:						
Stepstone	Moderate: steepness of slope, surface boulders, snowpack	Severe	Moderate	Severe	Stable	Moderate
459:						
Stevens	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
460:						
Stevens	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
461:						
Stevens	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
462:						
Stevens	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Surficial landslides, soil creep	Slight
468:						
Swipkin	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
469:						
Swipkin	Moderate: muddy conditions caused by seasonal soil wetness	Severe	Severe	Slight	Stable	Slight
470:						
Thout	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Severe
471:						
Thout	Moderate: Rock outcrop, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Moderate	Stable	Moderate
Rock outcrop.						
472:						
Thout	Moderate: steepness of slope, Rock outcrop, snowpack	Moderate	Moderate	Moderate	Stable	Severe
Rock outcrop.						
473:						
Thout	Severe: steepness of slope, Rock outcrop, snowpack	Moderate	Moderate	Moderate	Surficial landslides, soil creep	Severe
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
480:						
Togo	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
481:						
Togo	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
482:						
Togo	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
483:						
Togo	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
484:						
Togo	Severe: surface stones, Rock outcrop, snowpack	Moderate	Moderate	Severe	Stable	Moderate
Rock outcrop.						
485:						
Torboy	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Severe	Stable	Moderate
486:						
Torboy	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Severe	Stable	Moderate
488:						
Tunkcreek	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
489:						
Tunkcreek	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Severe	Stable	Moderate
497:						
Typic Xerorthents	Moderate to severe: muddy conditions caused by seasonal soil wetness, slope instability, steepness of slope	Moderate to severe	Slight to moderate	Slight to moderate	Surficial landslides, deep-seated landslides, soil creep	Moderate
Typic Xerochrepts	Moderate to severe: muddy conditions caused by seasonal soil wetness, slope instability, steepness of slope	Moderate to severe	Slight to moderate	Slight to moderate	Surficial landslides, deep-seated landslides, soil creep	Moderate
498:						
Ultic Haploxerolls	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate to severe	Slight to moderate	Slight to moderate	Surficial landslides, deep-seated landslides, soil creep	Slight
499:						
Uncas	Severe: seasonal high water table, muddy conditions caused prolonged soil wetness, snowpack	Severe	Severe	Moderate	Stable	Slight
500:						
Vanbrunt	Severe: Rock outcrop, surface stones and boulders	Moderate	Slight	Slight	Stable	Slight
Rock outcrop.						
501:						
Vanbrunt	Severe: steepness of slope, Rock outcrop, surface stones and boulders	Moderate	Slight	Slight	Stable	Moderate
Rock outcrop.						

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
502:						
Vanbrunt	Severe: steepness of slope, Rock outcrop, surface stones and boulders	Moderate	Slight	Slight	Surficial landslides, soil creep	Moderate
Rock outcrop.						
505:						
Wapal	Moderate: snowpack, loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
506:						
Wapal	Moderate: snowpack, loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
507:						
Wapal	Moderate: snowpack, loose surface layer when dry	Slight	Slight	Severe	Stable	Moderate
508:						
Wapal	Severe: steepness of slope, snowpack, loose surface layer when dry	Slight	Slight	Severe	Surficial landslides, soil creep	Severe
509:						
Wellscreek	Moderate: snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Slight
510:						
Wellscreek	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Stable	Moderate
511:						
Wellscreek	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Moderate	Slight	Surficial landslides, soil creep	Moderate
512:						
Whitestone	Moderate: muddy conditions caused by seasonal soil wetness	Moderate	Moderate	Slight	Stable	Slight

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
513:						
Whitestone	Moderate: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
514:						
Whitestone	Severe: steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Surficial landslides, soil creep	Moderate
515:						
Whitestone	Severe: surface stones, steepness of slope, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
516:						
Whitestone	Moderate: steepness of slope, Rock outcrop, muddy conditions caused by seasonal soil wetness	Moderate	Slight	Moderate	Stable	Moderate
Rock outcrop.						
517:						
Wilmont	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate
518:						
Wilmont	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
519:						
Wilmont	Moderate: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Stable	Moderate

Table 8.--Forest Operability--Continued

Soil name and map symbol	Physical limitations	Compaction hazard (moist)	Puddling hazard (wet)	Displacement hazard (dry)	Mass movement potential	Soil damage by fire
520:						
Wilmont	Severe: steepness of slope, snowpack, muddy conditions caused by seasonal soil wetness	Severe	Severe	Severe	Surficial landslides, soil creep	Moderate
525:						
Winthrop	Moderate: surface stones, loose surface layer when dry	Moderate	Slight	Moderate	Stable	Slight
530:						
Xerochrepts	Severe: Rock outcrop, steepness of slope, snowpack, surface cobbles and stones	Slight	Slight	Slight	Surficial landslides, deep-seated landslides	Severe
Rubble land.						
Rock outcrop.						

Table 9.--Forest Road Construction

(Only the soils that support woodland vegetation are rated.)

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
6: Aits	Slippery, soft	Not readily available	Slight	Stable	Severe
7: Aits	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
8: Aits	Slippery, soft	Not readily available	Slight	Stable	Severe
10: Andic Cryaquepts	Slippery, soft	Not readily available	Slight	Stable	Slight
14: Apex	Slippery, soft	Not readily available	Moderate	Stable	Severe
15: Apex	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
16: Apex	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Severe
17: Apex	Slippery, soft	Not readily available	Slight	Stable	Severe
18: Apex	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
19: Apex	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Severe
20: Aquic Xerofluvents	Soft	Readily available in most areas--rounded gravel and cobbles	Slight	Stable	Slight
21: Aquic Xerofluvents	Soft	Readily available in most areas--rounded gravel and cobbles	Slight	Stable	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
22:					
Aquic Xerofluvents	Soft	Readily available in most areas--rounded gravel and cobbles	Slight	Stable	Slight
29:					
Baldknob	Firm	Readily available--volcanic bedrock	Slight	Stable	Moderate
Thout	Firm	Readily available--volcanic bedrock	Slight	Stable	Moderate
Rock outcrop.					
30:					
Baldknob	Firm	Readily available--volcanic bedrock	Severe	Slough (wet)	Moderate
Thout	Firm	Readily available--volcanic bedrock	Severe	Slough (wet)	Moderate
Rock outcrop.					
31:					
Barnellcreek	Slippery, soft	Not readily available	Moderate	Stable	Severe
32:					
Bearspring	Soft	Readily available--granitic rock, variable quality	Moderate	Slough (wet)	Severe
33:					
Bearspring	Soft	Readily available--granitic rock, variable quality	Severe	Slump, slough (wet)	Moderate
34:					
Bernhill	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
35:					
Bernhill	Slippery, soft, sticky	Not readily available	Stable	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
37:					
Bisbee	Soft	Not readily available	Slight	Stable	Slight
38:					
Bisbee	Soft	Not readily available	Moderate	Slough (wet), ravel (dry)	Slight
39:					
Boesel	Soft	Readily available--rounded gravel and cobbles	Slight	Stable	Moderate
40:					
Bong	Soft	Not readily available	Moderate	Stable	Moderate
41:					
Bong	Soft	Not readily available	Severe	Slough (wet), ravel (dry)	Moderate
42:					
Bong	Soft	Not readily available	Slight	Stable	Moderate
47:					
Bossburg	Soft, slippery	Not readily available	Not applicable	Not applicable	Severe for short periods when dry
50:					
Brusher	Slippery, soft, sticky	Not readily available	Severe	Slough (wet)	Severe
51:					
Brusher	Slippery, soft, sticky	Not readily available	Moderate	Slough (wet)	Severe
52:					
Brusher	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
53:					
Brusher	Slippery, soft, sticky	Not readily available	Severe	Slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
54:					
Buhrig	Soft	Readily available--granitic and metamorphic bedrock, variable quality	Moderate	Slough (wet)	Severe
55:					
Buhrig	Soft	Readily available--granitic and metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight
56:					
Buhrig	Slippery, soft	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Severe
57:					
Buhrig	Soft	Readily available--granitic and metamorphic bedrock, variable quality	Moderate	Slough (wet)	Slight
Rock outcrop.					
58:					
Buhrig	Soft	Readily available--granitic and metamorphic bedrock, variable quality	Severe	Slough (wet)	Severe
Rock outcrop.					
59:					
Canteen	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
60:					
Canteen	Slippery, soft	Not readily available	Severe	Slough (wet)	Severe
61:					
Canteen	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
62:					
Canteen	Slippery, soft	Not readily available	Severe	Slough (wet)	Severe
63:					
Capoose	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
64:					
Capoose	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
65:					
Capoose	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
Rock outcrop.					
66:					
Capoose	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
Rock outcrop.					
73:					
Cedonia	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
74:					
Cedonia	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
75:					
Cedonia	Slippery, soft, sticky	Not readily available	Severe	Stable	Severe
76:					
Cedonia	Slippery, soft, sticky	Not readily available	Severe	Slump (wet), slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
77:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Slight	Stable	Severe
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Slight	Stable	Severe
78:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
79:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
80:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Slight	Stable	Severe
81:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
82:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
83:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
Brusher	Slippery, soft, sticky	Not readily available	Moderate	Slough (wet)	Severe
84:					
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
Centralpeak	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
Rock outcrop.					
85:					
Chumstick	Firm	Readily available--granitic bedrock, variable quality	Slight	Stable	Slight
Rock outcrop.					
86:					
Chumstick	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
Rock outcrop.					
87:					
Codylake	Slippery, soft	Not readily available	Moderate	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
88:					
Codylake	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
89:					
Codylake	Slippery, soft	Not readily available	Severe	Slough (wet)	Severe
104:					
Coxlake	Slippery, soft	Not readily available	Slight	Stable	Slight
105:					
Cryofluvents	Soft	Readily available--rounded gravel and cobbles	Slight	Stable	Slight
106:					
Cubcreek	Soft	Not readily available	Slight	Stable	Moderate
108:					
Dart	Soft	Not readily available	Slight	Stable	Slight
109:					
Dart	Soft	Not readily available	Severe	Slump (wet), ravel (dry)	Slight
110:					
Dart	Soft	Not readily available	Stable	Stable	Slight
Springdale	Firm	Readily available--rounded gravel and cobbles	Moderate	Stable	Slight
111:					
Dart	Soft	Not readily available	Severe	Slump (wet), ravel (dry)	Slight
Springdale	Firm	Readily available--rounded gravel and cobbles	Severe	Slump (wet), ravel (dry)	
112:					
Dehart	Soft	Not readily available	Moderate	Stable	Moderate
113:					
Dehart	Soft	Not readily available	Severe	Slump (wet), slough (wet)	Moderate

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
114:					
Dehart	Soft	Not readily available	Severe	Slump, slough (wet)	Moderate
Phoebe	Soft	Not readily available	Severe	Slough (wet)	Moderate
115:					
Dehart	Soft	Readily available--metamorphic bedrock, variable quality	Moderate	Stable	Moderate
Rock outcrop.					
116:					
Dehart	Soft	Readily available--metamorphic bedrock, variable quality	Severe	Slump (wet), slough (wet)	Moderate
Rock outcrop.					
117:					
Dinkelman	Soft	Not readily available	Slight	Stable	Severe
118:					
Dinkelman	Soft	Not readily available	Moderate	Stable	Severe
119:					
Dinkelman	Soft	Not readily available	Severe	Slough (wet)	Moderate
124:					
Donavan	Soft	Not readily available	Slight	Stable	Moderate
125:					
Donavan	Soft	Not readily available	Moderate	Stable	Moderate
126:					
Donavan	Soft	Not readily available	Slight	Stable	Moderate
127:					
Donavan	Soft	Not readily available	Moderate	Stable	Moderate
128:					
Donavan	Soft	Not readily available	Slight	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
129:					
Donavan	Soft	Not readily available	Moderate	Stable	Severe
130:					
Donavan	Soft	Not readily available	Severe	Slump, slough (wet)	Severe
131:					
Donavan	Soft	Not readily available	Slight	Stable	Severe
132:					
Donavan	Soft	Not readily available	Moderate	Stable	Severe
133:					
Donavan	Soft	Not readily available	Slight	Stable	Severe
Goldlake	Slippery, soft	Not readily available	Slight	Stable	Severe
134:					
Donavan	Soft	Not readily available	Moderate	Stable	Severe
Northstar	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate
135:					
Donavan	Soft	Readily available--granitic bedrock, variable quality	Slight	Stable	Moderate
Rock outcrop.					
136:					
Donavan	Soft	Readily available--bedrock, variable quality	Slight	Stable	Severe
Rock outcrop.					
137:					
Donavan	Soft	Readily available--bedrock, variable quality	Moderate	Stable	Severe
Rock outcrop.					

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
138:					
Donavan	Soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Moderate
Rock outcrop.					
140:					
Elbowlake	Slippery, soft	Not readily available	Slight	Stable	Severe
141:					
Elbowlake	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
142:					
Elbowlake	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
143:					
Elbowlake	Slippery, soft	Not readily available	Slight	Stable	Severe
144:					
Elbowlake	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
145:					
Elbowlake	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
155:					
Ewall	Soft	Not readily available	Slight	Stable	Slight
156:					
Ewall	Soft	Not readily available	Moderate	Ravel (dry)	Slight
169:					
Friedlander	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
170:					
Friedlander	Slippery, soft, sticky	Not readily available	Severe	Slough (wet)	Severe
171:					
Friedlander	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
172:					
Garrison	Soft	Readily available--rounded gravel and cobbles	Slight	Ravel (dry)	Severe
173:					
Garrison	Soft	Readily available--rounded gravel and cobbles	Slight	Ravel (dry)	Severe
174:					
Garrison	Soft	Readily available--rounded gravel and cobbles	Moderate	Ravel (dry)	Severe
175:					
Georgecreek	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
176:					
Georgecreek	Slippery, soft, sticky	Not readily available	Severe	Slough (wet)	Severe
177:					
Georgecreek	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
178:					
Georgecreek	Slippery, soft, sticky	Not readily available	Severe	Slough (wet)	Severe
187:					
Glenrose	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
188:					
Glenrose	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
189:					
Goddard	Soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
190:					
Goddard	Firm	Readily available--rounded gravel and cobbles	Moderate	Slough (wet), ravel (dry)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
191:					
Goddard	Firm	Readily available--rounded gravel and cobbles	Severe	Slump (wet), slough (wet), ravel (dry)	Severe
192:					
Goldlake	Slippery, soft	Not readily available	Slight	Stable	Severe
194:					
Growden	Slippery, soft	Not readily available	Severe	Slough (wet)	Moderate
199:					
Hallcreek	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
201:					
Hartill	Slippery, soft	Readily available--metamorphic bedrock, variable quality	Moderate	Slough (wet)	Severe
202:					
Hartill	Slippery, soft	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Severe
203:					
Hellgate	Firm	Not readily available	Slight	Stable	Slight
204:					
Hellgate	Firm	Not readily available	Slight	Stable	Moderate
205:					
Henneway	Slippery, soft, sticky	Readily available--metamorphic bedrock, variable quality	Moderate	Stable	Severe
206:					
Henneway	Slippery, soft, sticky	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
207:					
Henneway	Slippery, soft, sticky	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Severe
212:					
Hodgson	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
213:					
Hodgson	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
214:					
Hodgson	Slippery, soft, sticky	Not readily available	Severe	Stable	Severe
215:					
Hodgson	Slippery, soft, sticky	Not readily available	Severe	Slump, slough (wet)	Severe
216:					
Hudnut	Soft	Not readily available	Slight	Stable	Slight
217:					
Hudnut	Soft	Not readily available	Moderate	Stable	Slight
218:					
Hunters	Slippery, soft	Not readily available	Slight	Stable	Severe
220:					
Inchelium	Slippery, soft	Not readily available	Slight	Stable	Severe
221:					
Inchelium	Slippery, soft	Not readily available	Moderate	Stable	Severe
222:					
Inkler	Slippery, soft	Not readily available	Slight	Stable	Moderate
223:					
Inkler	Slippery, soft	Not readily available	Moderate	Slough (wet)	Moderate
224:					
Inkler	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Moderate

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
225:					
Inkler	Slippery, soft	Readily available--volcanic bedrock	Moderate	Stable	Moderate
Baldknob	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate
Rock outcrop.					
226:					
Inkler	Slippery, soft	Readily available--volcanic bedrock	Severe	Slough, slump (wet)	Moderate
Baldknob	Firm	Readily available--volcanic bedrock	Severe	Slough, (wet)	Moderate
Rock outcrop.					
227:					
Inkler	Slippery, soft	Readily available--volcanic bedrock	Moderate	Slough (wet)	Moderate
Rock outcrop.					
228:					
Inkler	Slippery, soft	Readily available--volcanic and metamorphic bedrock	Severe	Slump, slough (wet)	Moderate
Rock outcrop.					
229:					
Jimcreek	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
231:					
Karamin	Soft	Not readily available	Severe	Stable	Moderate
232:					
Karamin	Soft	Not readily available	Severe	Slough (wet), ravel (dry)	Moderate

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
233:					
Karamin	Soft	Not readily available	Severe	Slump, slough (wet), ravel (dry)	Moderate
234:					
Kartar	Soft	Not readily available	Slight	Stable	Moderate
235:					
Kellerbutte	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
236:					
Kellerbutte	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
237:					
Kenotrail	Slippery, soft, sticky	Not readily available--metamorphic bedrock, unsuitable	Severe	Slough (wet)	Severe
238:					
Kewach	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
239:					
Kewach	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
240:					
Kewach	Slippery, soft, sticky	Not readily available	Severe	Stable	Severe
241:					
Kewach	Slippery soft, sticky	Not readily available	Severe	Slump, slough (wet)	Severe
242:					
Kiehl	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
243:					
Kiehl	Slippery, soft	Readily available--rounded gravel and cobbles	Moderate	Slough (wet), ravel (dry)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
244:					
Kiehl	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Slump, slough (wet), ravel (dry)	Severe
245:					
Kiehl	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
246:					
Kiehl	Slippery, soft	Readily available--rounded gravel and cobbles	Moderate	Slough (wet), ravel (dry)	Severe
247:					
Kiehl	Slippery, soft	Readily available--rounded gravel and cobbles	Severe	Slump (wet), slough (wet), ravel (dry)	Severe
248:					
Koepke	Slippery, soft	Not readily available	Moderate	Stable	Severe
249:					
Lakesol	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
253:					
Loony	Slippery, soft	Not readily available	Slight	Stable	Severe
254:					
Lostcreek	Slippery, soft	Not readily available	Slight	Stable	Severe
255:					
Louiecreek	Firm	Not readily available	Slight	Stable	Moderate
256:					
Louploup	Slippery, soft	Not readily available	Moderate	Stable	Severe
257:					
Louploup	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
258:					
Lynxcreek	Slippery, soft, sticky	Not readily available	Severe	Slump, slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
267:					
Manley	Slippery, soft	Not readily available	Moderate	Stable	Severe
268:					
Manley	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
269:					
Manley	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
270:					
Manley	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
Codylake	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
271:					
Manley	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Slough (wet)	Severe
Rock outcrop.					
272:					
Manley	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slump (wet), slough (wet)	Severe
Rock outcrop.					
273:					
Martella	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
274:					
Martella	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
275:					
Martella	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
276:					
Medisaprists	Slippery, soft	Not readily available	Not applicable	Not applicable	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
277:					
Merkel	Firm	Not readily available	Slight	Stable	Moderate
278:					
Merkel	Firm	Not readily available	Moderate	Stable	Moderate
279:					
Merkel	Firm	Not readily available	Severe	Slump (wet), ravel (dry)	Moderate
280:					
Merkel	Firm	Not readily available	Slight	Stable	Moderate
281:					
Merkel	Firm	Not readily available	Moderate	Stable	Moderate
282:					
Mineral	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Moderate
283:					
Mineral	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Moderate
284:					
Mineral	Firm	Readily available--granitic bedrock, variable quality	Slight	Stable	Slight
Rock outcrop.					
285:					
Mineral	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
Rock outcrop.					

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
286:					
Mineral	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
Rock outcrop.					
287:					
Mineral	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
Rock outcrop.					
288:					
Mitchellpoint	Slippery, soft, sticky	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
293:					
Moscow	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
294:					
Moscow	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
295:					
Moses	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
296:					
Moses	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
297:					
Moses	Slippery, soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Moderate
298:					
Moses	Soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Moderate
299:					
Narcisse	Slippery, soft	Not readily available	Slight	Stable	Severe
300:					
Narcisse	Slippery, soft	Not readily available	Slight	Stable	Severe
305:					
Neuske	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
306:					
Neuske	Slippery, soft, sticky	Not readily available	Severe	Slough (wet)	Severe
307:					
Nevine	Slippery, soft	Not readily available	Slight	Stable	Severe
Nevine	Slippery, soft	Not readily available	Slight	Stable	Severe
308:					
Nevine	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
Nevine	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
309:					
Nevine	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Severe
Nevine	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
310:					
Nevine	Slippery, soft	Readily available--granitic and volcanic bedrock	Moderate	Slough (wet)	Severe
Nevine	Slippery, soft	Readily available--granitic and volcanic bedrock	Moderate	Slough (wet)	Severe
Rock outcrop.					
311:					
Nevine	Slippery, soft	Readily available--granitic and volcanic bedrock	Severe	Slump (wet), slough (wet)	Severe
Nevine	Slippery, soft	Readily available--granitic and volcanic bedrock	Severe	Slump (wet), slough (wet)	Severe
Rock outcrop.					
312:					
Newbell	Slippery, soft	Not readily available	Slight	Stable	Severe
313:					
Newbell	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
314:					
Newbell	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Severe
315:					
Northstar	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate
316:					
Northstar	Firm	Readily available--volcanic bedrock	Severe	Slough (wet)	Moderate
317:					
Northstar	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
317:					
Johntom	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate
Rock outcrop.					
318:					
Northstar	Firm	Readily available--volcanic bedrock	Severe	Slough (wet)	Moderate
Johntom	Firm	Readily available--volcanic bedrock	Severe	Slough (wet)	Moderate
Rock outcrop.					
319:					
Northstar	Firm	Readily available--volcanic bedrock	Moderate	Slough (wet)	Moderate
Louiecreek	Firm	Not readily available	Moderate	Slough (wet)	Moderate
Rock outcrop.					
320:					
Northstar	Firm	Readily available--volcanic bedrock	Severe	Slough (wet)	Moderate
Louiecreek	Firm	Not readily available	Severe	Slump, slough (wet)	Moderate
Rock outcrop.					
321:					
Northstar	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate
Rock outcrop.					
322:					
Ohscow	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
323:					
Ohscow	Slippery, soft	Not readily available	Severe	Slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
324:					
Ohscow	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
325:					
Ohscow	Slippery, soft	Not readily available	Severe	Slough (wet)	Severe
327:					
Omak	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
331:					
Oxerine	Slippery	Readily available--metamorphic bedrock, variable quality	Slight	Stable	Severe
332:					
Oxerine	Slippery	Readily available--metamorphic bedrock, variable quality	Moderate	Slough (wet)	Severe
333:					
Oxerine	Slippery	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Severe
334:					
Oxerine	Slippery	Readily available--metamorphic bedrock, variable quality	Moderate	Stable	Severe
Rock outcrop.					
335:					
Oxerine	Slippery	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Severe
Rock outcrop.					
336:					
Parmenter	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
337:					
Parmenter	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
338:					
Parmenter	Slippery, soft	Readily available--rounded gravel and cobbles	Moderate	Moderate	Severe
339:					
Parmenter	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
343:					
Phoebe	Soft	Not readily available	Slight	Stable	Moderate
344:					
Phoebe	Soft	Not readily available	Slight	Stable	Moderate
345:					
Phoebe	Soft	Not readily available	Moderate	Stable	Moderate
346:					
Phoebe	Soft	Not readily available	Severe	Slough (wet)	Moderate
347:					
Phoebe	Soft	Not readily available	Slight	Stable	Moderate
348:					
Phoebe	Soft	Not readily available	Slight	Stable	Moderate
349:					
Phoebe	Soft	Not readily available	Moderate	Stable	Moderate
350:					
Phoebe	Soft	Not readily available	Moderate	Stable	Moderate
Dehart	Soft	Not readily available	Moderate	Stable	Moderate
361:					
Quincy	Soft	Not readily available	Moderate	Ravel (dry)	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
368:					
Raisio	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight
369:					
Raisio	Firm	Readily available--metamorphic bedrock, variable quality	Moderate	Slough (wet)	Slight
Rock outcrop.					
370:					
Raisio	Firm	Readily available--metamorphic bedrock, variable quality	Moderate	Stable	Slight
Rufus	Firm	Readily available--metamorphic bedrock, variable quality	Moderate	Stable	Slight
371:					
Raisio	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight
Rufus	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight
372:					
Raisio	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight
Rufus	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
373:					
Raisio	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight
Rufus	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight
Rock outcrop.					
376:					
Ralsen	Slippery, soft	Not readily available	Slight	Stable	Slight
378:					
Reardan	Slippery, soft, sticky	Not readily available	Slight	Stable	Severe
379:					
Reardan	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
382:					
Renha	Slippery, soft, sticky	Not readily available	Moderate	Stable	Severe
383:					
Renha	Slippery, soft, sticky	Not readily available	Severe	Slough (wet)	Severe
384:					
Renha	Slippery, soft, sticky	Not readily available--limestone bedrock is poorly suited	Severe	Slough (wet)	Severe
Oxerine	Slippery, soft	Not readily available--limestone bedrock is poorly suited	Moderate	Slough (wet)	Severe
385:					
Republic	Soft	Not readily available	Slight	Stable	Severe
386:					
Republic	Soft	Not readily available	Moderate	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
387:					
Republic	Soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
388:					
Resner	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
389:					
Resner	Slippery, soft	Readily available--rounded gravel and cobbles	Moderate	Slough (wet), ravel (dry)	Severe
390:					
Ret	Slippery, soft	Not readily available	Slight	Stable	Slight
393:					
Rock outcrop.					
Chumstick	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
394:					
Rock outcrop.					
Chumstick	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
395:					
Rock outcrop.					
Mineral	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
396:					
Rock outcrop.					
Rufus	Firm	Readily available--metamorphic bedrock, variable quality	Severe	Slough (wet)	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
399:					
Rock outcrop.					
Vanbrunt	Firm	Not readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
405:					
Sacheen	Soft	Not readily available	Moderate	Ravel (dry)	Slight
406:					
Sacheen	Soft	Not readily available	Severe	Slump (wet), ravel (dry)	Slight
407:					
Sacheen	Soft	Not readily available	Slight	Stable	Slight
408:					
Sanpoil	Slippery, soft	Not readily available	Slight	Stable	Slight
409:					
Sanpoil	Slippery, soft	Not readily available	Slight	Stable	Slight
410:					
Scala	Slippery, soft	Not readily available	Slight	Stable	Severe
411:					
Sclome	Slippery, soft, sticky	Not readily available	Slight	Stable	Moderate
412:					
Scoap	Slippery, soft	Not readily available	Slight	Stable	Severe
413:					
Scoap	Slippery, firm	Not readily available	Moderate	Slough (wet)	Moderate
414:					
Scoap	Slippery, firm	Not readily available	Severe	Slump, slough (wet)	Moderate
415:					
Scoap	Slippery, firm	Readily available--volcanic and metamorphic bedrock	Moderate	Slough (wet)	Moderate
Rock outcrop.					

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
416:					
Scoap	Slippery, firm	Readily available--volcanic and metamorphic bedrock	Severe	Slump, slough (wet)	Moderate
Rock outcrop.					
417:					
Scrabblers	Slippery, soft	Not readily available	Slight	Stable	Severe
418:					
Scrabblers	Slippery, soft	Not readily available	Moderate	Slough (wet), ravel (dry)	Severe
419:					
Scrabblers	Slippery, soft	Not readily available	Slight	Stable	Severe
420:					
Scrabblers	Slippery, soft	Not readily available	Moderate	Slough (wet), ravel (dry)	Severe
421:					
Sitdown	Slippery, soft	Readily available--rounded gravel and cobbles	Severe	Slough (wet), ravel (dry)	Severe
428:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Slight	Stable	Slight
429:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
430:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
431:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Slight	Stable	Slight
432:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
433:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
434:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
Rock outcrop.					
435:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
Rock outcrop.					
436:					
Skanid	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
Rock outcrop.					
437:					
Spens	Firm	Readily available--rounded gravel and cobbles	Moderate	Ravel (dry)	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
438:					
Spens	Firm	Readily available--rounded gravel and cobbles	Severe	Slump (wet), ravel (dry)	Slight
439:					
Spokane	Soft	Readily available--granitic bedrock, variable quality	Slight	Stable	Severe
440:					
Spokane	Soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
441:					
Spokane	Soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
442:					
Spokane	Soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
443:					
Spokane	Soft	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Severe
444:					
Spokane	Soft	Readily available--granitic bedrock, variable quality	Slight	Stable	Severe
Rock outcrop.					

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
445:					
Spokane	Soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Severe
Rock outcrop.					
446:					
Spokane	Firm	Readily available--granitic bedrock, variable quality	Slight	Stable	Slight
Skanid	Firm	Readily available--granitic bedrock, variable quality	Slight	Stable	Slight
447:					
Spokane	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
Skanid	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
448:					
Spokane	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
Skanid	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
449:					
Springdale	Firm	Readily available--rounded gravel and cobbles	Slight	Stable	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
450:					
Springdale	Firm	Readily available--rounded gravel and cobbles	Moderate	Stable	Slight
451:					
Springdale	Firm	Readily available--rounded gravel and cobbles	Severe	Slump (wet), ravel (dry)	Slight
452:					
Stapaloop	Soft	Not readily available	Slight	Stable	Moderate
453:					
Stapaloop	Soft	Not readily available	Moderate	Slough (wet)	Moderate
454:					
Stapaloop	Soft	Not readily available	Slight	Stable	Moderate
455:					
Stepstone	Slippery, soft	Readily available--rounded gravel and cobbles	Slight	Stable	Severe
456:					
Stepstone	Slippery, soft	Readily available--rounded gravel and cobbles	Moderate	Slough (wet)	Severe
457:					
Stepstone	Slippery, soft	Readily available--rounded gravel and cobbles	Severe	Slump (wet), slough (wet)	Severe
458:					
Stepstone	Slippery, soft	Readily available--rounded gravel and cobbles	Moderate	Slough (wet)	Severe
459:					
Stevens	Slippery, soft	Not readily available	Slight	Stable	Severe
460:					
Stevens	Slippery, soft	Not readily available	Moderate	Stable	Severe
461:					
Stevens	Slippery, soft	Not readily available	Severe	Stable	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
462:					
Stevens	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Severe
468:					
Swipkin	Slippery, soft	Not readily available	Slight	Stable	Severe
469:					
Swipkin	Slippery, soft	Not readily available	Moderate	Stable	Severe
470:					
Thout	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate
471:					
Thout	Firm	Readily available--volcanic bedrock	Slight	Stable	Moderate
Rock outcrop.					
472:					
Thout	Firm	Readily available--volcanic bedrock	Moderate	Stable	Moderate
Rock outcrop.					
473:					
Thout	Firm	Readily available--volcanic bedrock	Severe	Slough (wet)	Moderate
Rock outcrop.					
480:					
Togo	Slippery, soft	Not readily available	Slight	Stable	Severe
481:					
Togo	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
482:					
Togo	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
483:					
Togo	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
484:					
Togo	Slippery, soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Moderate
Rock outcrop.					
485:					
Torboy	Soft	Not readily available	Slight	Stable	Moderate
486:					
Torboy	Soft	Not readily available	Moderate	Slough (wet), ravel (dry)	Moderate
488:					
Tunkcreek	Soft	Not readily available	Slight	Stable	Moderate
489:					
Tunkcreek	Soft	Not readily available	Moderate	Slough (wet), ravel (dry)	Moderate
497:					
Typic Xerorthents	Slippery, soft	Not readily available	Moderate to severe	Slump, slough (wet), ravel (dry)	Moderate to severe
Typic Xerochrepts	Slippery, soft	Not readily available	Moderate to severe	Slump, slough (wet), ravel (dry)	Moderate to severe
498:					
Ultic Haploxerolls	Slippery, soft	Not readily available	Severe	Slough, slump (wet), ravel (dry)	Moderate to severe
499:					
Uncas	Slippery, soft	Not readily available	---	---	Severe for short periods when dry

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
500:					
Vanbrunt	Firm	Readily available--granitic bedrock, variable quality	Slight	Stable	Slight
Rock outcrop.					
501:					
Vanbrunt	Firm	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
Rock outcrop.					
502:					
Vanbrunt	Firm	Readily available--granitic bedrock, variable quality	Severe	Slough (wet)	Slight
Rock outcrop.					
505:					
Wapal	Firm	Readily available--rounded gravel and cobbles	Slight	Stable	Slight
506:					
Wapal	Firm	Readily available--rounded gravel and cobbles	Slight	Stable	Slight
507:					
Wapal	Firm	Readily available--rounded gravel and cobbles	Moderate	Stable	Slight
508:					
Wapal	Firm	Readily available--rounded gravel and cobbles	Severe	Slump (wet), ravel (dry)	Slight
509:					
Wellscreek	Slippery, soft	Not readily available	Slight	Stable	Moderate
510:					
Wellscreek	Slippery, soft	Not readily available	Moderate	Slough (wet)	Moderate

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
511:					
Wellscreek	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Moderate
512:					
Whitestone	Soft	Not readily available	Slight	Stable	Severe
513:					
Whitestone	Soft	Not readily available	Moderate	Stable	Slight
514:					
Whitestone	Soft	Not readily available	Severe	Slump, slough (wet)	Slight
515:					
Whitestone	Soft	Not readily available	Moderate	Stable	Slight
516:					
Whitestone	Soft	Readily available--granitic bedrock, variable quality	Moderate	Stable	Slight
Rock outcrop.					
517:					
Wilmont	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
518:					
Wilmont	Slippery, soft	Not readily available	Severe	Slump (wet), slough (wet)	Severe
519:					
Wilmont	Slippery, soft	Not readily available	Moderate	Slough (wet)	Severe
520:					
Wilmont	Slippery, soft	Not readily available	Severe	Slump, slough (wet)	Severe
525:					
Winthrop	Firm	Readily available--rounded gravel and cobbles	Slight	Stable	Slight
530:					
Xerochrepts	Firm	Readily available--bedrock and talus	Moderate	Slump, slough (wet)	Slight

Table 9.--Forest Road Construction--Continued

Soil name and map symbol	Roads and skid trails	Road rock	Cut and fill erosion	Cut and fill slope stability	Dust hazard
530:					
Rubble land.					
Rock outcrop.					

Table 10.--Forest Overstory Production

(Only the soils that support woodland vegetation are rated.)

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
6:								
Aits	Douglas-fir	78	Douglas-fir	70	Douglas-fir	54 (98)	Douglas-fir	5,360
	Grand fir	84	Grand fir	50	Grand fir	61 (103)	Grand fir	6,070
7:								
Aits								
	Douglas-fir	78	Douglas-fir	70	Douglas-fir	54 (98)	Douglas-fir	5,360
	Grand fir	84	Grand fir	50	Grand fir	61 (103)	Grand fir	6,070
8:								
Aits	Douglas-fir	75	Douglas-fir	75	Douglas-fir	53 (100)	Douglas-fir	5,320
	Grand fir	89	Grand fir	55	Grand fir	72 (97)	Grand fir	7,250
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
10:								
Andic Cryaquepts	Douglas-fir	75	Douglas-fir	100	Douglas-fir	71 (100)	Douglas-fir	7,090
	Engelmann spruce	98	Engelmann spruce	---	Engelmann spruce	105 (90)	Engelmann spruce	---
	Lodgepole pine	85	Lodgepole pine	---	Lodgepole pine	98 (100)	Lodgepole pine	---
	Subalpine fir	98	Subalpine fir	---	Subalpine fir	105 (90)	Subalpine fir	---
	Western larch	65	Western larch	90	Western larch	82 (70)	Western larch	6,520
14:								
Apex	Douglas-fir	84	Douglas-fir	65	Douglas-fir	59 (94)	Douglas-fir	5,850
	Ponderosa pine	113	Ponderosa pine	45	Ponderosa pine	58 (40)	Ponderosa pine	4,560
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
15:								
Apex	Douglas-fir	84	Douglas-fir	65	Douglas-fir	59 (94)	Douglas-fir	5,850
	Ponderosa pine	113	Ponderosa pine	45	Ponderosa pine	58 (40)	Ponderosa pine	4,560
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
16:								
Apex	Douglas-fir	84	Douglas-fir	65	Douglas-fir	59 (94)	Douglas-fir	5,850
	Ponderosa pine	113	Ponderosa pine	45	Ponderosa pine	58 (40)	Ponderosa pine	4,560
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
17:								
Apex	Douglas-fir	71	Douglas-fir	90	Douglas-fir	57 (102)	Douglas-fir	5,690
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850

Table 10.--Forest Overstory Production--Continued

Soil name and map symbolnd	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
18:								
Apex	Douglas-fir	71	Douglas-fir	90	Douglas-fir	57 (102)	Douglas-fir	5,690
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
19:								
Apex	Douglas-fir	71	Douglas-fir	90	Douglas-fir	57 (102)	Douglas-fir	5,690
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
20:								
Aquic Xerofluvents	Douglas-fir	95	Douglas-fir	65	Douglas-fir	76 (84)	Douglas-fir	7,530
	Western larch	83	Western larch	65	Western larch	81 (70)	Western larch	7,910
21:								
Aquic Xerofluvents	Douglas-fir	85	Douglas-fir	70	Douglas-fir	64 (94)	Douglas-fir	6,460
	Grand fir	88	Grand fir	55	Grand fir	71 (98)	Grand fir	7,140
22:								
Aquic Xerofluvents	Ponderosa pine	123	Ponderosa pine	55	Ponderosa pine	81 (40)	Ponderosa pine	6,570
29:								
Baldknob	Ponderosa pine	55	Ponderosa pine	10	Ponderosa pine	5 (---)	Ponderosa pine	---
Thout	Douglas-fir	50	Douglas-fir	75	Douglas-fir	22 (116)	Douglas-fir	2,180
	Ponderosa pine	65	Ponderosa pine	50	Ponderosa pine	25 (50)	Ponderosa pine	2,010
Rock outcrop.								
30:								
Baldknob	Ponderosa pine	55	Ponderosa pine	10	Ponderosa pine	5 (---)	Ponderosa pine	---
Thout	Douglas-fir	50	Douglas-fir	75	Douglas-fir	22 (116)	Douglas-fir	2,180
	Ponderosa pine	65	Ponderosa pine	50	Ponderosa pine	25 (50)	Ponderosa pine	2,010
Rock outcrop.								
31:								
Barnellcreek	Douglas-fir	80	Douglas-fir	75	Douglas-fir	61 (97)	Douglas-fir	6,030
	Ponderosa pine	103	Ponderosa pine	60	Ponderosa pine	65 (40)	Ponderosa pine	5,130
	Western larch	78	Western larch	80	Western larch	94 (70)	Western larch	8.6
32:								
Bearspring	Douglas-fir	67	Douglas-fir	75	Douglas-fir	42 (105)	Douglas-fir	4,190
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
33:								
Bearspring	Douglas-fir	67	Douglas-fir	75	Douglas-fir	42 (105)	Douglas-fir	4,190
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
34:								
Bernhill	Ponderosa pine	96	Ponderosa pine	60	Ponderosa pine	57 (40)	Ponderosa pine	4,520
35:								
Bernhill	Ponderosa pine	96	Ponderosa pine	60	Ponderosa pine	57 (40)	Ponderosa pine	4,520
37:								
Bisbee	Ponderosa pine	91	Ponderosa pine	50	Ponderosa pine	44 (40)	Ponderosa pine	3,420
38:								
Bisbee	Ponderosa pine	91	Ponderosa pine	50	Ponderosa pine	44 (40)	Ponderosa pine	3,420
39:								
Boesel	Douglas-fir	85	Douglas-fir	75	Douglas-fir	69 (94)	Douglas-fir	6,920
	Ponderosa pine	121	Ponderosa pine	60	Ponderosa pine	86 (40)	Ponderosa pine	6,930
40:								
Bong	Ponderosa pine	72	Ponderosa pine	45	Ponderosa pine	26 (50)	Ponderosa pine	2,100
41:								
Bong	Ponderosa pine	72	Ponderosa pine	45	Ponderosa pine	26 (50)	Ponderosa pine	2,100
42:								
Bong	Ponderosa pine	107	Ponderosa pine	70	Ponderosa pine	81 (40)	Ponderosa pine	6,410
47:								
Bossburg	Quaking aspen	40	Quaking aspen	---	Quaking aspen	30 (100)	Quaking aspen	---
50:								
Brusher	Douglas-fir	80	Douglas-fir	75	Douglas-fir	61 (97)	Douglas-fir	6,030
	Grand fir	85	Grand fir	60	Grand fir	74 (102)	Grand fir	7,410
51:								
Brusher	Douglas-fir	84	Douglas-fir	65	Douglas-fir	59 (94)	Douglas-fir	5,850
	Grand fir	90	Grand fir	60	Grand fir	80 (96)	Grand fir	8,050
	Western larch	75	Western larch	55	Western larch	61 (70)	Western larch	5,450
52:								
Brusher	Douglas-fir	75	Douglas-fir	65	Douglas-fir	46 (100)	Douglas-fir	4,610
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
53:								
Brusher	Douglas-fir	75	Douglas-fir	65	Douglas-fir	46 (100)	Douglas-fir	4,610
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070
54:								
Buhrig	Douglas-fir	61	Douglas-fir	90	Douglas-fir	41 (109)	Douglas-fir	4,050
	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	95	Subalpine fir	---	Subalpine fir	100 (90)	Subalpine fir	---
55:								
Buhrig	Douglas-fir	61	Douglas-fir	90	Douglas-fir	41 (109)	Douglas-fir	4,050
	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	95	Subalpine fir	---	Subalpine fir	100 (90)	Subalpine fir	---
56:								
Buhrig	Douglas-fir	70	Douglas-fir	75	Douglas-fir	46 (103)	Douglas-fir	---
	Grand fir	70	Grand fir	55	Grand fir	52 (113)	Grand fir	5,200
	Subalpine fir	95	Subalpine fir	---	Subalpine fir	100 (90)	Subalpine fir	4,600
57:								
Buhrig	Douglas-fir	61	Douglas-fir	90	Douglas-fir	41 (109)	Douglas-fir	4,050
	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	95	Subalpine fir	---	Subalpine fir	100 (90)	Subalpine fir	---
Rock outcrop.								
58:								
Buhrig	Douglas-fir	61	Douglas-fir	90	Douglas-fir	41 (109)	Douglas-fir	4,050
	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	95	Subalpine fir	---	Subalpine fir	100 (90)	Subalpine fir	---
Rock outcrop.								
59:								
Canteen	Douglas-fir	67	Douglas-fir	90	Douglas-fir	50 (105)	Douglas-fir	5,030
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
60:								
Canteen	Douglas-fir	67	Douglas-fir	90	Douglas-fir	50 (105)	Douglas-fir	5,030
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
61:								
Canteen	Douglas-fir	80	Douglas-fir	70	Douglas-fir	57 (97)	Douglas-fir	5,630
	Grand fir	90	Grand fir	55	Grand fir	73 (96)	Grand fir	7,370
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
62:								
Canteen	Douglas-fir	80	Douglas-fir	70	Douglas-fir	57 (97)	Douglas-fir	5,630
	Grand fir	90	Grand fir	55	Grand fir	73 (96)	Grand fir	7,370
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
63:								
Capoose	Douglas-fir	67	Douglas-fir	90	Douglas-fir	50 (105)	Douglas-fir	5,030
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
64:								
Capoose	Douglas-fir	67	Douglas-fir	90	Douglas-fir	50 (105)	Douglas-fir	5,030
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
65:								
Capoose	Douglas-fir	67	Douglas-fir	90	Douglas-fir	50 (105)	Douglas-fir	5,030
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Rock outcrop.								
66:								
Capoose	Douglas-fir	67	Douglas-fir	90	Douglas-fir	40 (105)	Douglas-fir	5,030
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	41 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	44 (70)	Western larch	4,350
Rock outcrop.								
73:								
Cedonia	Ponderosa pine	102	Ponderosa pine	65	Ponderosa pine	69 (40)	Ponderosa pine	5,460
74:								
Cedonia	Ponderosa pine	102	Ponderosa pine	65	Ponderosa pine	69 (40)	Ponderosa pine	5,460
75:								
Cedonia	Ponderosa pine	102	Ponderosa pine	65	Ponderosa pine	69 (40)	Ponderosa pine	5,460

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
76:								
Cedonia	Ponderosa pine	102	Ponderosa pine	65	Ponderosa pine	69 (40)	Ponderosa pine	5,460
77:								
Centralpeak	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Centralpeak	Douglas-fir	65	Douglas-fir	80	Douglas-fir	42 (106)	Douglas-fir	4,18
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
78:								
Centralpeak	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Centralpeak	Douglas-fir	65	Douglas-fir	80	Douglas-fir	42 (106)	Douglas-fir	4,180
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
79:								
Centralpeak	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Centralpeak	Douglas-fir	65	Douglas-fir	80	Douglas-fir	42 (106)	Douglas-fir	4,180
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
80:								
Centralpeak	Douglas-fir	65	Douglas-fir	80	Douglas-fir	42 (106)	Douglas-fir	4,180
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
81:								
Centralpeak	Douglas-fir	65	Douglas-fir	90	Douglas-fir	42 (106)	Douglas-fir	4,180
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
82:								
Centralpeak	Douglas-fir	65	Douglas-fir	90	Douglas-fir	42 (106)	Douglas-fir	4,180
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
83:								
Centralpeak	Douglas-fir	65	Douglas-fir	80	Douglas-fir	42 (104)	Douglas-fir	4,180
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	42 (40)	Ponderosa pine	3,630

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
83:								
Brusher	Douglas-fir	84	Douglas-fir	65	Douglas-fir	59 (94)	Douglas-fir	5,850
	Grand fir	90	Grand fir	60	Grand fir	80 (96)	Grand fir	8,040
	Western larch	75	Western larch	55	Western larch	61 (70)	Western larch	5,450
84:								
Centralpeak	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Centralpeak	Douglas-fir	65	Douglas-fir	80	Douglas-fir	42 (106)	Douglas-fir	4,180
	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	46 (40)	Ponderosa pine	3,630
Rock outcrop.								
85:								
Chumstick	Douglas-fir	50	Douglas-fir	55	Douglas-fir	16 (116)	Douglas-fir	1,600
	Ponderosa pine	65	Ponderosa pine	40	Ponderosa pine	20 (50)	Ponderosa pine	1,610
Rock outcrop.								
86:								
Chumstick	Douglas-fir	50	Douglas-fir	55	Douglas-fir	16 (116)	Douglas-fir	1,600
	Ponderosa pine	65	Ponderosa pine	40	Ponderosa pine	20 (50)	Ponderosa pine	1,610
Rock outcrop.								
87:								
Codylake	Douglas-fir	70	Douglas-fir	70	Douglas-fir	43 (103)	Douglas-fir	4,290
	Lodgepole pine	85	Lodgepole pine	---	Lodgepole pine	98 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	60	Western larch	70	Western larch	57 (70)	Western larch	4,200
88:								
Codylake	Douglas-fir	70	Douglas-fir	70	Douglas-fir	43 (103)	Douglas-fir	4,290
	Lodgepole pine	85	Lodgepole pine	---	Lodgepole pine	98 (100)	Lodgepole pine	---
	Subalpine fir		Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	60	Western larch	70	Western larch	57 (70)	Western larch	4,200
89:								
Codylake	Douglas-fir	70	Douglas-fir	70	Douglas-fir	43 (103)	Douglas-fir	4,290
	Lodgepole pine	85	Lodgepole pine	---	Lodgepole pine	98 (100)	Lodgepole pine	---
	Subalpine fir		Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	60	Western larch	70	Western larch	57 (70)	Western larch	4,200

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
104:								
Coxlake	Quaking aspen	45	Quaking aspen	---	Quaking aspen	35 (100)	Quaking aspen	---
105:								
Cryofluvents	Douglas-fir	70	Douglas-fir	80	Douglas-fir	49 (103)	Douglas-fir	4,900
	Engelmann spruce	106	Engelmann spruce	---	Engelmann spruce	120 (85)	Engelmann spruce	---
	Subalpine fir	106	Subalpine fir	---	Subalpine fir	120 (85)	Subalpine fir	---
106:								
Cubcreek	Douglas-fir	87	Douglas-fir	75	Douglas-fir	73 (92)	Douglas-fir	7,280
	Ponderosa pine	130	Ponderosa pine	85	Ponderosa pine	141 (40)	Ponderosa pine	1 1,35
108:								
Dart	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
109:								
Dart	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
110:								
Dart	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
Springdale	Ponderosa pine	81	Ponderosa pine	50	Ponderosa pine	36 (40)	Ponderosa pine	2,770
111:								
Dart	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
Springdale	Ponderosa pine	81	Ponderosa pine	50	Ponderosa pine	36 (40)	Ponderosa pine	2,770
112:								
Dehart	Ponderosa pine	95	Ponderosa pine	45	Ponderosa pine	42 (40)	Ponderosa pine	3,330
113:								
Dehart	Ponderosa pine	95	Ponderosa pine	45	Ponderosa pine	42 (40)	Ponderosa pine	3,330
114:								
Dehart	Ponderosa pine	95	Ponderosa pine	45	Ponderosa pine	42 (40)	Ponderosa pine	3,330
Phoebe	Ponderosa pine	70	Ponderosa pine	50	Ponderosa pine	28 (50)	Ponderosa pine	2,240
115:								
Dehart	Ponderosa pine	95	Ponderosa pine	45	Ponderosa pine	42 (40)	Ponderosa pine	3,330
Rock outcrop.								

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
116:								
Dehart	Ponderosa pine	95	Ponderosa pine	45	Ponderosa pine	42 (40)	Ponderosa pine	3,330
Rock outcrop.								
117:								
Dinkelman	Douglas-fir	67	Douglas-fir	85	Douglas-fir	48 (105)	Douglas-fir	4,750
	Ponderosa pine	88	Ponderosa pine	65	Ponderosa pine	53 (40)	Ponderosa pine	4,190
118:								
Dinkelman	Douglas-fir	67	Douglas-fir	85	Douglas-fir	48 (105)	Douglas-fir	4,750
	Ponderosa pine	88	Ponderosa pine	65	Ponderosa pine	53 (40)	Ponderosa pine	4,190
119:								
Dinkelman	Douglas-fir	67	Douglas-fir	85	Douglas-fir	48 (105)	Douglas-fir	4,750
	Ponderosa pine	88	Ponderosa pine	65	Ponderosa pine	53 (40)	Ponderosa pine	4,190
124:								
Donavan	Ponderosa pine	84	Ponderosa pine	60	Ponderosa pine	45 (40)	Ponderosa pine	3,560
125:								
Donavan	Ponderosa pine	84	Ponderosa pine	60	Ponderosa pine	45 (40)	Ponderosa pine	3,560
126:								
Donavan	Ponderosa pine	84	Ponderosa pine	60	Ponderosa pine	45 (40)	Ponderosa pine	3,560
127:								
Donavan	Ponderosa pine	84	Ponderosa pine	60	Ponderosa pine	45 (40)	Ponderosa pine	3,560
128:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
129:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
130:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
131:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
132:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
133:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
Goldlake	Ponderosa pine	124	Ponderosa pine	55	Ponderosa pine	83 (40)	Ponderosa pine	6,680
134:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
Northstar	Ponderosa pine	81	Ponderosa pine	45	Ponderosa pine	32 (40)	Ponderosa pine	2,490
135:								
Donavan	Ponderosa pine	84	Ponderosa pine	60	Ponderosa pine	45 (40)	Ponderosa pine	3,560
Rock outcrop.								
136:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
Rock outcrop.								
137:								
Donavan	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
Rock outcrop.								
138:								
Donavan	Ponderosa pine	84	Ponderosa pine	60	Ponderosa pine	45 (40)	Ponderosa pine	3,560
Rock outcrop.								
140:								
Elbowlake	Douglas-fir	85	Douglas-fir	60	Douglas-fir	55 (94)	Douglas-fir	5,540
	Grand fir	90	Grand fir	50	Grand fir	67 (96)	Grand fir	6,700
	Western larch	75	Western larch	50	Western larch	56 (70)	Western larch	4,950
141:								
Elbowlake	Douglas-fir	85	Douglas-fir	60	Douglas-fir	55 (94)	Douglas-fir	5,540
	Grand fir	90	Grand fir	50	Grand fir	67 (96)	Grand fir	6,700
	Western larch	75	Western larch	50	Western larch	56 (70)	Western larch	4,950
142:								
Elbowlake	Douglas-fir	85	Douglas-fir	60	Douglas-fir	55 (94)	Douglas-fir	5,540
	Grand fir	90	Grand fir	50	Grand fir	67 (96)	Grand fir	6,700
	Western larch	75	Western larch	50	Western larch	56 (70)	Western larch	4,950

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
143:								
Elbowlake	Douglas-fir	87	Douglas-fir	65	Douglas-fir	63 (92)	Douglas-fir	6,310
	Ponderosa pine	110	Ponderosa pine	60	Ponderosa pine	73 (40)	Ponderosa pine	5,770
	Western larch	82	Western larch	45	Western larch	56 (70)	Western larch	5,350
144:								
Elbowlake	Douglas-fir	87	Douglas-fir	65	Douglas-fir	63 (92)	Douglas-fir	6,310
	Ponderosa pine	110	Ponderosa pine	60	Ponderosa pine	73 (40)	Ponderosa pine	5,770
	Western larch	82	Western larch	45	Western larch	56 (70)	Western larch	5,350
145:								
Elbowlake	Douglas-fir	87	Douglas-fir	65	Douglas-fir	63 (92)	Douglas-fir	6,310
	Ponderosa pine	110	Ponderosa pine	60	Ponderosa pine	73 (40)	Ponderosa pine	5,770
	Western larch	82	Western larch	45	Western larch	56 (70)	Western larch	5,350
155:								
Ewall	Ponderosa pine	75	Ponderosa pine	45	Ponderosa pine	28 (45)	Ponderosa pine	2,270
156:								
Ewall	Ponderosa pine	75	Ponderosa pine	45	Ponderosa pine	28 (45)	Ponderosa pine	2,270
169:								
Friedlander	Douglas-fir	81	Douglas-fir	70	Douglas-fir	58 (96)	Douglas-fir	5,800
	Ponderosa pine	95	Ponderosa pine	70	Ponderosa pine	66 (40)	Ponderosa pine	5,180
170:								
Friedlander	Douglas-fir	81	Douglas-fir	70	Douglas-fir	58 (96)	Douglas-fir	5,800
	Ponderosa pine	95	Ponderosa pine	70	Ponderosa pine	66 (40)	Ponderosa pine	5,180
171:								
Friedlander	Douglas-fir	70	Douglas-fir	75	Douglas-fir	46 (103)	Douglas-fir	4,600
	Ponderosa pine	80	Ponderosa pine	60	Ponderosa pine	41 (40)	Ponderosa pine	3,250
172:								
Garrison	Ponderosa pine	96	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,140
173:								
Garrison	Ponderosa pine	96	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,140
174:								
Garrison	Ponderosa pine	96	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,140
175:								
Georgecreek	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
176:								
Georgecreek	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
177:								
Georgecreek	Ponderosa pine	72	Ponderosa pine	65	Ponderosa pine	38 (50)	Ponderosa pine	3,030
178:								
Georgecreek	Ponderosa pine	72	Ponderosa pine	65	Ponderosa pine	38 (50)	Ponderosa pine	3,030
187:								
Glenrose	Ponderosa pine	118	Ponderosa pine	55	Ponderosa pine	75 (40)	Ponderosa pine	6,050
188:								
Glenrose	Ponderosa pine	118	Ponderosa pine	55	Ponderosa pine	75 (40)	Ponderosa pine	6,050
189:								
Goddard	Douglas-fir	58	Douglas-fir	75	Douglas-fir	31 (111)	Douglas-fir	3,030
	Ponderosa pine	78	Ponderosa pine	55	Ponderosa pine	36 (40)	Ponderosa pine	2,870
190:								
Goddard	Douglas-fir	58	Douglas-fir	75	Douglas-fir	31 (111)	Douglas-fir	3,030
	Ponderosa pine	78	Ponderosa pine	55	Ponderosa pine	36 (40)	Ponderosa pine	2,870
191:								
Goddard	Douglas-fir	58	Douglas-fir	75	Douglas-fir	31 (111)	Douglas-fir	3,030
	Ponderosa pine	78	Ponderosa pine	55	Ponderosa pine	36 (40)	Ponderosa pine	2,870
192:								
Goldlake	Ponderosa pine	124	Ponderosa pine	55	Ponderosa pine	83 (40)	Ponderosa pine	6,680
194:								
Growden	Douglas-fir	50	Douglas-fir	60	Douglas-fir	17 (116)	Douglas-fir	1,740
	Lodgepole pine	70	Lodgepole pine	---	Lodgepole pine	70 (100)	Lodgepole pine	---
	Subalpine fir	78	Subalpine fir	---	Subalpine fir	70 (105)	Subalpine fir	---
199:								
Hallcreek	Ponderosa pine	94	Ponderosa pine	60	Ponderosa pine	55 (40)	Ponderosa pine	4,350
201:								
Hartill	Douglas-fir	80	Douglas-fir	80	Douglas-fir	65 (97)	Douglas-fir	6,440
	Grand fir	85	Grand fir	60	Grand fir	74 (102)	Grand fir	7,410
	Ponderosa pine	110	Ponderosa pine	80	Ponderosa pine	98 (40)	Ponderosa pine	7,700
	Western larch	65	Western larch	70	Western larch	64 (70)	Western larch	5,070

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
202:								
Hartill	Douglas-fir	80	Douglas-fir	80	Douglas-fir	65 (97)	Douglas-fir	6,440
	Grand fir	85	Grand fir	60	Grand fir	74 (102)	Grand fir	7,410
	Ponderosa pine	110	Ponderosa pine	80	Ponderosa pine	98 (40)	Ponderosa pine	7,700
	Western larch	65	Western larch	70	Western larch	64 (70)	Western larch	5,070
203:								
Hellgate	Ponderosa pine	115	Ponderosa pine	40	Ponderosa pine	53 (40)	Ponderosa pine	4,190
204:								
Hellgate	Ponderosa pine	109	Ponderosa pine	50	Ponderosa pine	60 (40)	Ponderosa pine	4,730
205:								
Henneway	Douglas-fir	81	Douglas-fir	90	Douglas-fir	75 (96)	Douglas-fir	7,450
	Grand fir	80	Grand fir	55	Grand fir	63 (107)	Grand fir	6,210
	Western larch	75	Western larch	60	Western larch	67 (70)	Western larch	5,940
206:								
Henneway	Douglas-fir	81	Douglas-fir	90	Douglas-fir	75 (96)	Douglas-fir	7,450
	Grand fir	80	Grand fir	55	Grand fir	63 (107)	Grand fir	6,210
	Western larch	75	Western larch	60	Western larch	67 (70)	Western larch	5,940
207:								
Henneway	Douglas-fir	75	Douglas-fir	65	Douglas-fir	46 (100)	Douglas-fir	4,610
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
212:								
Hodgson	Douglas-fir	73	Douglas-fir	80	Douglas-fir	54 (101)	Douglas-fir	5,360
	Ponderosa pine	96	Ponderosa pine	65	Ponderosa pine	62 (40)	Ponderosa pine	4,900
213:								
Hodgson	Douglas-fir	73	Douglas-fir	80	Douglas-fir	54 (101)	Douglas-fir	5,360
	Ponderosa pine	96	Ponderosa pine	65	Ponderosa pine	62 (40)	Ponderosa pine	4,900
214:								
Hodgson	Douglas-fir	73	Douglas-fir	80	Douglas-fir	54 (101)	Douglas-fir	5,360
	Ponderosa pine	96	Ponderosa pine	65	Ponderosa pine	62 (40)	Ponderosa pine	4,900
215:								
Hodgson	Douglas-fir	73	Douglas-fir	80	Douglas-fir	54 (101)	Douglas-fir	5,360
	Ponderosa pine	96	Ponderosa pine	65	Ponderosa pine	62 (40)	Ponderosa pine	4,900

Table 10.--Forest Overstory Production--Continued

Soil name and msp symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
216:								
Hudnut	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
217:								
Hudnut	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
218:								
Hunters	Ponderosa pine	108	Ponderosa pine	65	Ponderosa pine	77 (40)	Ponderosa pine	6,050
220:								
Inchelium	Ponderosa pine	115	Ponderosa pine	60	Ponderosa pine	79 (40)	Ponderosa pine	6,290
221:								
Inchelium	Ponderosa pine	115	Ponderosa pine	60	Ponderosa pine	79 (40)	Ponderosa pine	6,290
222:								
Inkler	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	103	Ponderosa pine	70	Ponderosa pine	76 (40)	Ponderosa pine	5,980
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
223:								
Inkler	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	103	Ponderosa pine	70	Ponderosa pine	76 (40)	Ponderosa pine	5,980
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
224:								
Inkler	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	103	Ponderosa pine	70	Ponderosa pine	76 (40)	Ponderosa pine	5,980
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
225:								
Inkler	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	103	Ponderosa pine	70	Ponderosa pine	76 (40)	Ponderosa pine	5,980
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Baldknob	Ponderosa pine	55	Ponderosa pine	10	Ponderosa pine	5 (---)	Ponderosa pine	---
Rock outcrop.								
226:								
Inkler	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	103	Ponderosa pine	70	Ponderosa pine	76 (40)	Ponderosa pine	5,980
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
226:								
Baldknob	Ponderosa pine	55	Ponderosa pine	10	Ponderosa pine	5 (---)	Ponderosa pine	---
Rock outcrop.								
227:								
Inkler	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	103	Ponderosa pine	70	Ponderosa pine	76 (40)	Ponderosa pine	5,980
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Rock outcrop.								
228:								
Inkler	Douglas-fir	74	Douglas-fir	75	Douglas-fir	52 (101)	Douglas-fir	5,170
	Ponderosa pine	103	Ponderosa pine	70	Ponderosa pine	76 (40)	Ponderosa pine	5,980
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
Rock outcrop.								
229:								
Jimcreek	Ponderosa pine	123	Ponderosa pine	55	Ponderosa pine	81 (40)	Ponderosa pine	6,570
231:								
Karamin	Douglas-fir	73	Douglas-fir	95	Douglas-fir	64 (101)	Douglas-fir	6,370
	Ponderosa pine	111	Ponderosa pine	65	Ponderosa pine	81 (40)	Ponderosa pine	6,370
	Western larch	70	Western larch	85	Western larch	86 (70)	Western larch	7,220
232:								
Karamin	Douglas-fir	73	Douglas-fir	95	Douglas-fir	64 (101)	Douglas-fir	6,370
	Ponderosa pine	111	Ponderosa pine	65	Ponderosa pine	81 (40)	Ponderosa pine	6,370
	Western larch	70	Western larch	85	Western larch	86 (70)	Western larch	7,220
233:								
Karamin	Douglas-fir	73	Douglas-fir	95	Douglas-fir	64 (101)	Douglas-fir	6,370
	Ponderosa pine	111	Ponderosa pine	65	Ponderosa pine	81 (40)	Ponderosa pine	6,370
	Western larch	70	Western larch	85	Western larch	86 (70)	Western larch	7,220
234:								
Kartar	Ponderosa pine	81	Ponderosa pine	50	Ponderosa pine	34 (40)	Ponderosa pine	2,770
235:								
Kellerbutte	Douglas-fir	84	Douglas-fir	90	Douglas-fir	81 (94)	Douglas-fir	8,090
	Western larch	75	Western larch	70	Western larch	78 (70)	Western larch	6,930

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
236:								
Kellerbutte	Douglas-fir	84	Douglas-fir	90	Douglas-fir	81 (94)	Douglas-fir	8,090
	Western larch	75	Western larch	70	Western larch	78 (70)	Western larch	6,930
237:								
Kenotrail	Douglas-fir	65	Douglas-fir	70	Douglas-fir	36 (106)	Douglas-fir	3,660
	Ponderosa pine	85	Ponderosa pine	55	Ponderosa pine	42 (40)	Ponderosa pine	3,330
238:								
Kewach	Douglas-fir	82	Douglas-fir	70	Douglas-fir	60 (96)	Douglas-fir	5,960
	Ponderosa pine	97	Ponderosa pine	65	Ponderosa pine	63 (40)	Ponderosa pine	4,990
239:								
Kewach	Douglas-fir	82	Douglas-fir	70	Douglas-fir	60 (96)	Douglas-fir	5,960
	Ponderosa pine	97	Ponderosa pine	65	Ponderosa pine	63 (40)	Ponderosa pine	4,990
240:								
Kewach	Douglas-fir	82	Douglas-fir	70	Douglas-fir	60 (96)	Douglas-fir	5,960
	Ponderosa pine	97	Ponderosa pine	65	Ponderosa pine	63 (40)	Ponderosa pine	4,990
241:								
Kewach	Douglas-fir	82	Douglas-fir	70	Douglas-fir	60 (96)	Douglas-fir	5,960
	Ponderosa pine	97	Ponderosa pine	65	Ponderosa pine	63 (40)	Ponderosa pine	4,990
242:								
Kiehl	Douglas-fir	81	Douglas-fir	75	Douglas-fir	62 (96)	Douglas-fir	6,210
	Ponderosa pine	105	Ponderosa pine	65	Ponderosa pine	73 (40)	Ponderosa pine	5,760
	Western larch	70	Western larch	75	Western larch	76 (70)	Western larch	6,370
243:								
Kiehl	Douglas-fir	81	Douglas-fir	75	Douglas-fir	62 (96)	Douglas-fir	5,760
	Ponderosa pine	105	Ponderosa pine	65	Ponderosa pine	73 (40)	Ponderosa pine	5,760
	Western larch	70	Western larch	75	Western larch	76 (70)	Western larch	6,370
244:								
Kiehl	Douglas-fir	81	Douglas-fir	75	Douglas-fir	62 (96)	Douglas-fir	6,210
	Ponderosa pine	105	Ponderosa pine	65	Ponderosa pine	73 (40)	Ponderosa pine	5,760
	Western larch	70	Western larch	75	Western larch	76 (70)	Western larch	6,370
245:								
Kiehl	Douglas-fir	76	Douglas-fir	90	Douglas-fir	66 (99)	Douglas-fir	6,550
	Grand fir	95	Grand fir	50	Grand fir	72 (92)	Grand fir	7,140

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
246:								
Kiehl	Douglas-fir	76	Douglas-fir	90	Douglas-fir	66 (99)	Douglas-fir	6,550
	Grand fir	95	Grand fir	50	Grand fir	66 (99)	Grand fir	7,140
247:								
Kiehl	Douglas-fir	76	Douglas-fir	90	Douglas-fir	66 (99)	Douglas-fir	6,550
	Grand fir	95	Grand fir	50	Grand fir	72 (92)	Grand fir	7,140
248:								
Koepke	Douglas-fir	80	Douglas-fir	75	Douglas-fir	61 (97)	Douglas-fir	6,040
	Ponderosa pine	105	Ponderosa pine	70	Ponderosa pine	78 (40)	Ponderosa pine	6,200
249:								
Lakesol	Douglas-fir	84	Douglas-fir	75	Douglas-fir	67 (94)	Douglas-fir	6,740
	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
253:								
Loony	Douglas-fir	65	Douglas-fir	75	Douglas-fir	39 (106)	Douglas-fir	3,920
	Lodgepole pine	80	Lodgepole pine	---	Lodgepole pine	88 (100)	Lodgepole pine	88
	Western larch	58	Western larch	50	Western larch	39 (70)	Western larch	2,790
254:								
Lostcreek	Douglas-fir	85	Douglas-fir	95	Douglas-fir	87 (94)	Douglas-fir	8,770
	Ponderosa pine	108	Ponderosa pine	80	Ponderosa pine	94 (40)	Ponderosa pine	7,450
	Western larch	75	Western larch	75	Western larch	83 (70)	Western larch	7,430
255:								
Louiecreek	Ponderosa pine	106	Ponderosa pine	55	Ponderosa pine	63 (40)	Ponderosa pine	4,950
256:								
Louploup	Douglas-fir	79	Douglas-fir	70	Douglas-fir	55 (98)	Douglas-fir	5,500
	Ponderosa pine	99	Ponderosa pine	60	Ponderosa pine	60 (40)	Ponderosa pine	4,770
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
257:								
Louploup	Douglas-fir	79	Douglas-fir	70	Douglas-fir	55 (98)	Douglas-fir	5,500
	Ponderosa pine	99	Ponderosa pine	60	Ponderosa pine	60 (40)	Ponderosa pine	4,770
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
258:								
Lynxcreek	Douglas-fir	62	Douglas-fir	65	Douglas-fir	31 (109)	Douglas-fir	3,040
	Engelmann spruce	98	Engelmann spruce	---	Engelmann spruce	105 (90)	Engelmann spruce	---
	Subalpine fir	95	Subalpine fir	---	Subalpine fir	100 (90)	Subalpine fir	---

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
267:								
Manley	Douglas-fir	79	Douglas-fir	85	Douglas-fir	67 (98)	Douglas-fir	6,680
	Engelmann spruce	90	Engelmann spruce	---	Engelmann spruce	91 (90)	Engelmann spruce	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
268:								
Manley	Douglas-fir	79	Douglas-fir	85	Douglas-fir	67 (98)	Douglas-fir	6,680
	Engelmann spruce	90	Engelmann spruce	---	Engelmann spruce	91 (90)	Engelmann spruce	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
269:								
Manley	Douglas-fir	79	Douglas-fir	85	Douglas-fir	67 (98)	Douglas-fir	6,680
	Engelmann spruce	90	Engelmann spruce	90	Engelmann spruce	91 (90)	Engelmann spruce	---
	Subalpine fir	90	Subalpine fir	90	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
270:								
Manley	Douglas-fir	79	Douglas-fir	85	Douglas-fir	67 (98)	Douglas-fir	6,680
	Engelmann spruce	90	Engelmann spruce	---	Engelmann spruce	91 (90)	Engelmann spruce	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
Codylake	Douglas-fir	70	Douglas-fir	70	Douglas-fir	43 (103)	Douglas-fir	4,290
	Lodgepole pine	90	Lodgepole pine	---	Lodgepole pine	108 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	60	Western larch	70	Western larch	57 (70)	Western larch	4,200
271:								
Manley	Douglas-fir	79	Douglas-fir	85	Douglas-fir	67 (98)	Douglas-fir	6,680
	Engelmann spruce	90	Engelmann spruce	---	Engelmann spruce	91 (90)	Engelmann spruce	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
Rock outcrop.								
272:								
Manley	Douglas-fir	79	Douglas-fir	85	Douglas-fir	67 (98)	Douglas-fir	6,680
	Engelmann spruce	90	Engelmann spruce	---	Engelmann spruce	91 (90)	Engelmann spruce	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	67	Western larch	60	Western larch	57 (70)	Western larch	4,640
Rock outcrop.								

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
273:								
Martella	Douglas-fir	79	Douglas-fir	85	Douglas-fir	67 (98)	Douglas-fir	6,680
	Grand fir	80	Grand fir	55	Grand fir	63 (107)	Grand fir	6,210
	Ponderosa pine	112	Ponderosa pine	80	Ponderosa pine	101 (40)	Ponderosa pine	7,970
	Western larch	75	Western larch	75	Western larch	83 (70)	Western larch	7,430
274:								
Martella	Douglas-fir	72	Douglas-fir	80	Douglas-fir	52 (102)	Douglas-fir	5,210
	Lodgepole pine	90	Lodgepole pine	---	Lodgepole pine	108 (100)	Lodgepole pine	---
	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
	Western larch	62	Western larch	80	Western larch	68 (70)	Western larch	5,200
275:								
Martella	Douglas-fir	72	Douglas-fir	80	Douglas-fir	52 (102)	Douglas-fir	5,210
	Lodgepole pine	90	Lodgepole pine	---	Lodgepole pine	108 (100)	Lodgepole pine	---
	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
	Western larch	62	Western larch	80	Western larch	68 (70)	Western larch	5,200
276:								
Medisaprists	Quaking aspen	40	Quaking aspen	---	Quaking aspen	30 (100)	Quaking aspen	---
277:								
Merkel	Douglas-fir	77	Douglas-fir	60	Douglas-fir	45 (99)	Douglas-fir	4,480
	Ponderosa pine	102	Ponderosa pine	55	Ponderosa pine	58 (40)	Ponderosa pine	4,620
278:								
Merkel	Douglas-fir	77	Douglas-fir	60	Douglas-fir	45 (99)	Douglas-fir	4,480
	Ponderosa pine	102	Ponderosa pine	55	Ponderosa pine	58 (40)	Ponderosa pine	4,620
279:								
Merkel	Douglas-fir	77	Douglas-fir	60	Douglas-fir	45 (99)	Douglas-fir	4,480
	Ponderosa pine	102	Ponderosa pine	55	Ponderosa pine	58 (40)	Ponderosa pine	4,620
280:								
Merkel	Douglas-fir	77	Douglas-fir	60	Douglas-fir	45 (99)	Douglas-fir	4,480
	Ponderosa pine	102	Ponderosa pine	55	Ponderosa pine	58 (40)	Ponderosa pine	4,620
281:								
Merkel	Douglas-fir	77	Douglas-fir	60	Douglas-fir	45 (99)	Douglas-fir	4,480
	Ponderosa pine	102	Ponderosa pine	55	Ponderosa pine	58 (40)	Ponderosa pine	4,620
282:								
Mineral	Douglas-fir	50	Douglas-fir	80	Douglas-fir	23 (116)	Douglas-fir	2,320
	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
283:								
Mineral	Douglas-fir	50	Douglas-fir	80	Douglas-fir	23 (116)	Douglas-fir	2,320
	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360
284:								
Mineral	Douglas-fir	50	Douglas-fir	80	Douglas-fir	23 (116)	Douglas-fir	2,320
	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360
Rock outcrop.								
285:								
Mineral	Douglas-fir	50	Douglas-fir	80	Douglas-fir	23 (116)	Douglas-fir	2,320
	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360
Rock outcrop.								
286:								
Mineral	Douglas-fir	50	Douglas-fir	80	Douglas-fir	23 (116)	Douglas-fir	2,320
	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360
Rock outcrop.								
287:								
Mineral	Douglas-fir	64	Douglas-fir	70	Douglas-fir	36 (107)	Douglas-fir	3,530
	Ponderosa pine	80	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,730
Rock outcrop.								
288:								
Mitchellpoint	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
293:								
Moscow	Douglas-fir	80	Douglas-fir	80	Douglas-fir	65 (97)	Douglas-fir	6,440
	Grand fir	89	Grand fir	60	Grand fir	79 (97)	Grand fir	7,910
294:								
Moscow	Douglas-fir	80	Douglas-fir	80	Douglas-fir	65 (97)	Douglas-fir	6,440
	Grand fir	89	Grand fir	60	Grand fir	79 (97)	Grand fir	7,910
295:								
Moses	Lodgepole pine	93	Lodgepole pine	---	Lodgepole pine	114 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	68	Western larch	60	Western larch	58 (70)	Western larch	4,790

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
296:								
Moses	Lodgepole pine	93	Lodgepole pine	---	Lodgepole pine	114 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	68	Western larch	60	Western larch	58 (70)	Western larch	4,790
297:								
Moses	Lodgepole pine	93	Lodgepole pine	---	Lodgepole pine	114 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	68	Western larch	60	Western larch	58 (70)	Western larch	4,790
298:								
Moses	Lodgepole pine	25	Lodgepole pine	---	Lodgepole pine	12 (100)	Lodgepole pine	---
	Subalpine fir	30	Subalpine fir	---	Subalpine fir	15 (170)	Subalpine fir	---
299:								
Narcisse	Ponderosa pine	130	Ponderosa pine	40	Ponderosa pine	66 (40)	Ponderosa pine	5,340
300:								
Narcisse	Ponderosa pine	100	Ponderosa pine	40	Ponderosa pine	41 (40)	Ponderosa pine	3,240
305:								
Neuske	Douglas-fir	77	Douglas-fir	70	Douglas-fir	53 (99)	Douglas-fir	5,230
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
306:								
Neuske	Douglas-fir	77	Douglas-fir	70	Douglas-fir	53 (99)	Douglas-fir	5,230
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
307:								
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
308:								
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
308:								
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
309:								
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
310:								
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
Rock outcrop.								
311:								
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
Nevine	Douglas-fir	78	Douglas-fir	75	Douglas-fir	58 (98)	Douglas-fir	5,750
	Ponderosa pine	104	Ponderosa pine	60	Ponderosa pine	66 (40)	Ponderosa pine	5,220
	Western larch	68	Western larch	55	Western larch	53 (70)	Western larch	4,390
Rock outcrop.								
312:								
Newbell	Douglas-fir	82	Douglas-fir	85	Douglas-fir	73 (96)	Douglas-fir	7,240
	Grand fir	70	Grand fir	65	Grand fir	62 (113)	Grand fir	6,140
	Western larch	75	Western larch	60	Western larch	67 (70)	Western larch	5,940

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
313:								
Newbell	Douglas-fir	82	Douglas-fir	85	Douglas-fir	73 (96)	Douglas-fir	7,240
	Grand fir	70	Grand fir	65	Grand fir	62 (113)	Grand fir	6,140
	Western larch	75	Western larch	60	Western larch	67 (70)	Western larch	5,940
314:								
Newbell	Douglas-fir	82	Douglas-fir	85	Douglas-fir	73 (96)	Douglas-fir	7,240
	Grand fir	70	Grand fir	65	Grand fir	62 (113)	Grand fir	6,140
	Western larch	75	Western larch	60	Western larch	67 (70)	Western larch	5,940
315:								
Northstar	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360
316:								
Northstar	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360
317:								
Northstar	Ponderosa pine	81	Ponderosa pine	45	Ponderosa pine	33 (40)	Ponderosa pine	2,490
Johntom	Ponderosa pine	60	Ponderosa pine	10	Ponderosa pine	10 (---)	Ponderosa pine	100
Rock outcrop.								
318:								
Northstar	Ponderosa pine	81	Ponderosa pine	45	Ponderosa pine	33 (40)	Ponderosa pine	2,490
Johntom	Ponderosa pine	60	Ponderosa pine	10	Ponderosa pine	10 (---)	Ponderosa pine	---
Rock outcrop.								
319:								
Northstar	Ponderosa pine	81	Ponderosa pine	45	Ponderosa pine	33 (40)	Ponderosa pine	2,490
Louiecreek	Ponderosa pine	106	Ponderosa pine	55	Ponderosa pine	63 (40)	Ponderosa pine	4,950
Rock outcrop.								
320:								
Northstar	Ponderosa pine	81	Ponderosa pine	45	Ponderosa pine	33 (40)	Ponderosa pine	2,490
Louiecreek	Ponderosa pine	106	Ponderosa pine	55	Ponderosa pine	63 (40)	Ponderosa pine	4,950
Rock outcrop.								

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
321:								
Northstar	Ponderosa pine	81	Ponderosa pine	45	Ponderosa pine	33 (40)	Ponderosa pine	2,490
Rock outcrop.								
322:								
Ohscow	Douglas-fir	71	Douglas-fir	85	Douglas-fir	54 (102)	Douglas-fir	5,370
	Ponderosa pine	85	Ponderosa pine	65	Ponderosa pine	50 (40)	Ponderosa pine	3,940
323:								
Ohscow	Douglas-fir	71	Douglas-fir	85	Douglas-fir	54 (102)	Douglas-fir	5,370
	Ponderosa pine	85	Ponderosa pine	65	Ponderosa pine	50 (40)	Ponderosa pine	3,940
324:								
Ohscow	Douglas-fir	83	Douglas-fir	75	Douglas-fir	66 (95)	Douglas-fir	6,570
	Grand fir	84	Grand fir	80	Grand fir	98 (103)	Grand fir	9,710
325:								
Ohscow	Douglas-fir	83	Douglas-fir	75	Douglas-fir	66 (95)	Douglas-fir	6,570
	Grand fir	84	Grand fir	80	Grand fir	98 (103)	Grand fir	9,710
327:								
Omak	Ponderosa pine	70	Ponderosa pine	75	Ponderosa pine	41 (50)	Ponderosa pine	3,360
331:								
Oxerine	Douglas-fir	88	Douglas-fir	60	Douglas-fir	59 (91)	Douglas-fir	5,960
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070
	Western larch	69	Western larch	45	Western larch	45 (70)	Western larch	3,710
332:								
Oxerine	Douglas-fir	88	Douglas-fir	60	Douglas-fir	59 (91)	Douglas-fir	5,960
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070
	Western larch	69	Western larch	45	Western larch	45 (70)	Western larch	3,710
333:								
Oxerine	Douglas-fir	88	Douglas-fir	60	Douglas-fir	59 (91)	Douglas-fir	5,960
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070
	Western larch	69	Western larch	45	Western larch	45 (70)	Western larch	3,710
334:								
Oxerine	Douglas-fir	88	Douglas-fir	60	Douglas-fir	59 (91)	Douglas-fir	5,960
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070
	Western larch	69	Western larch	45	Western larch	45 (70)	Western larch	3,710

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
334:								
Rock outcrop.								
335:								
Oxerine	Douglas-fir	88	Douglas-fir	60	Douglas-fir	59 (91)	Douglas-fir	5,960
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070
	Western larch	69	Western larch	45	Western larch	45 (70)	Western larch	3,710
Rock outcrop.								
336:								
Parmenter	Douglas-fir	64	Douglas-fir	80	Douglas-fir	41 (107)	Douglas-fir	4,030
	Ponderosa pine	92	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,840
337:								
Parmenter	Douglas-fir	64	Douglas-fir	80	Douglas-fir	41 (107)	Douglas-fir	4,030
	Ponderosa pine	92	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,840
338:								
Parmenter	Douglas-fir	64	Douglas-fir	80	Douglas-fir	41 (107)	Douglas-fir	4,030
	Ponderosa pine	92	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,840
339:								
Parmenter	Douglas-fir	64	Douglas-fir	80	Douglas-fir	41 (107)	Douglas-fir	4,030
	Ponderosa pine	92	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,840
343:								
Phoebe	Ponderosa pine	105	Ponderosa pine	70	Ponderosa pine	78 (40)	Ponderosa pine	6,200
344:								
Phoebe	Ponderosa pine	105	Ponderosa pine	70	Ponderosa pine	78 (40)	Ponderosa pine	6,200
345:								
Phoebe	Ponderosa pine	105	Ponderosa pine	70	Ponderosa pine	78 (40)	Ponderosa pine	6,200
346:								
Phoebe	Ponderosa pine	105	Ponderosa pine	70	Ponderosa pine	78 (40)	Ponderosa pine	6,200
347:								
Phoebe	Ponderosa pine	70	Ponderosa pine	50	Ponderosa pine	28 (50)	Ponderosa pine	2,240
348:								
Phoebe	Ponderosa pine	70	Ponderosa pine	50	Ponderosa pine	28 (50)	Ponderosa pine	2,240

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
349:								
Phoebe	Ponderosa pine	70	Ponderosa pine	50	Ponderosa pine	28 (50)	Ponderosa pine	2,240
350:								
Phoebe	Ponderosa pine	70	Ponderosa pine	50	Ponderosa pine	28 (50)	Ponderosa pine	2,240
Dehart	Ponderosa pine	95	Ponderosa pine	45	Ponderosa pine	42 (40)	Ponderosa pine	3,330
361:								
Quincy	Ponderosa pine	60	Ponderosa pine	40	Ponderosa pine	18 (55)	Ponderosa pine	1,400
368:								
Raisio	Ponderosa pine	86	Ponderosa pine	55	Ponderosa pine	43 (40)	Ponderosa pine	3,400
369:								
Raisio	Ponderosa pine	86	Ponderosa pine	55	Ponderosa pine	43 (40)	Ponderosa pine	3,400
Rock outcrop.								
370:								
Raisio	Ponderosa pine	80	Ponderosa pine	50	Ponderosa pine	35 (40)	Ponderosa pine	2,710
Rufus	Ponderosa pine	65	Ponderosa pine	10	Ponderosa pine	10 (---)	Ponderosa pine	---
371:								
Raisio	Ponderosa pine	80	Ponderosa pine	50	Ponderosa pine	35 (40)	Ponderosa pine	2,710
Rufus	Ponderosa pine	65	Ponderosa pine	10	Ponderosa pine	10 (---)	Ponderosa pine	---
372:								
Raisio	Ponderosa pine	86	Ponderosa pine	55	Ponderosa pine	43 (40)	Ponderosa pine	3,400
Rufus	Ponderosa pine	65	Ponderosa pine	10	Ponderosa pine	10 (---)	Ponderosa pine	---
373:								
Raisio	Ponderosa pine	86	Ponderosa pine	55	Ponderosa pine	43 (40)	Ponderosa pine	3,400
Rufus	Ponderosa pine	65	Ponderosa pine	10	Ponderosa pine	10 (---)	Ponderosa pine	---
Rock outcrop.								
376:								
Ralsen	Quaking aspen	45	Quaking aspen	---	Quaking aspen	35 (100)	Quaking aspen	---

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
378:								
Reardan	Ponderosa pine	74	Ponderosa pine	70	Ponderosa pine	43 (45)	Ponderosa pine	3,400
379:								
Reardan	Ponderosa pine	74	Ponderosa pine	70	Ponderosa pine	43 (45)	Ponderosa pine	3,400
382:								
Renha	Douglas-fir	85	Douglas-fir	75	Douglas-fir	69 (94)	Douglas-fir	6,920
	Grand fir	85	Grand fir	55	Grand fir	68 (102)	Grand fir	6,790
383:								
Renha	Douglas-fir	85	Douglas-fir	75	Douglas-fir	69 (94)	Douglas-fir	6,920
	Grand fir	85	Grand fir	55	Grand fir	68 (102)	Grand fir	6,790
384:								
Renha	Douglas-fir	75	Douglas-fir	70	Douglas-fir	50 (100)	Douglas-fir	4,960
	Ponderosa pine	90	Ponderosa pine	60	Ponderosa pine	51 (40)	Ponderosa pine	4,020
Oxerine	Douglas-fir	88	Douglas-fir	60	Douglas-fir	59 (91)	Douglas-fir	5,960
	Ponderosa pine	95	Ponderosa pine	55	Ponderosa pine	52 (40)	Ponderosa pine	4,070
	Western larch	69	Western larch	45	Western larch	45 (70)	Western larch	3,710
385:								
Republic	Douglas-fir	76	Douglas-fir	80	Douglas-fir	58 (99)	Douglas-fir	5,820
	Ponderosa pine	91	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,760
386:								
Republic	Douglas-fir	76	Douglas-fir	80	Douglas-fir	58 (99)	Douglas-fir	5,820
	Ponderosa pine	91	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,760
387:								
Republic	Douglas-fir	76	Douglas-fir	80	Douglas-fir	58 (99)	Douglas-fir	5,820
	Ponderosa pine	91	Ponderosa pine	55	Ponderosa pine	48 (40)	Ponderosa pine	3,760
388:								
Resner	Douglas-fir	64	Douglas-fir	75	Douglas-fir	38 (107)	Douglas-fir	3,780
	Lodgepole pine	93	Lodgepole pine	---	Lodgepole pine	114 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	66	Western larch	70	Western larch	65 (70)	Western larch	5,240

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
389:								
Resner	Douglas-fir	64	Douglas-fir	75	Douglas-fir	38 (107)	Douglas-fir	3,780
	Lodgepole pine	93	Lodgepole pine	---	Lodgepole pine	114 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	66	Western larch	70	Western larch	65 (70)	Western larch	5,240
390:								
Ret	Douglas-fir	104	Douglas-fir	60	Douglas-fir	85 (76)	Douglas-fir	8,270
	Western larch	80	Western larch	60	Western larch	73 (70)	Western larch	6,790
393:								
Rock outcrop.								
Chumstick	Douglas-fir	50	Douglas-fir	55	Douglas-fir	16 (116)	Douglas-fir	1,600
	Ponderosa pine	65	Ponderosa pine	40	Ponderosa pine	20 (50)	Ponderosa pine	1,610
394:								
Rock outcrop.								
Chumstick	Douglas-fir	50	Douglas-fir	55	Douglas-fir	16 (116)	Douglas-fir	1,600
	Ponderosa pine	65	Ponderosa pine	40	Ponderosa pine	20 (50)	Ponderosa pine	1,610
395:								
Rock outcrop.								
Mineral	Douglas-fir	50	Douglas-fir	80	Douglas-fir	23 (116)	Douglas-fir	2,320
	Ponderosa pine	68	Ponderosa pine	55	Ponderosa pine	29 (50)	Ponderosa pine	2,360
396:								
Rock outcrop.								
Rufus	Ponderosa pine	65	Ponderosa pine	10	Ponderosa pine	10 (---)	Ponderosa pine	---
399:								
Rock outcrop.								
Vanbrunt	Ponderosa pine	76	Ponderosa pine	45	Ponderosa pine	28 (45)	Ponderosa pine	2,270
405:								
Sacheen	Douglas-fir	70	Douglas-fir	95	Douglas-fir	58 (103)	Douglas-fir	5,820
	Ponderosa pine	107	Ponderosa pine	65	Ponderosa pine	65 (40)	Ponderosa pine	5,960

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
406:								
Sacheen	Douglas-fir	70	Douglas-fir	95	Douglas-fir	58 (103)	Douglas-fir	5,820
	Ponderosa pine	107	Ponderosa pine	65	Ponderosa pine	74 (40)	Ponderosa pine	5,960
407:								
Sacheen	Douglas-fir	70	Douglas-fir	95	Douglas-fir	58 103)	Douglas-fir	5,820
	Ponderosa pine	107	Ponderosa pine	65	Ponderosa pine	65 (40)	Ponderosa pine	5,960
408:								
Sanpoil	Quaking aspen	45	Quaking aspen	---	Quaking aspen	35 (100)	Quaking aspen	---
409:								
Sanpoil	Quaking aspen	40	Quaking aspen	---	Quaking aspen	30 (100)	Quaking aspen	---
410:								
Scala	Douglas-fir	79	Douglas-fir	95	Douglas-fir	75 (98)	Douglas-fir	7,460
	Ponderosa pine	109	Ponderosa pine	70	Ponderosa pine	84 (40)	Ponderosa pine	6,630
411:								
Sclome	Douglas-fir	85	Douglas-fir	60	Douglas-fir	55 (94)	Douglas-fir	5,540
	Ponderosa pine	100	Ponderosa pine	50	Ponderosa pine	51 (40)	Ponderosa pine	4,050
	Western larch	80	Western larch	50	Western larch	61 (70)	Western larch	5,660
412:								
Scoap	Douglas-fir	89	Douglas-fir	75	Douglas-fir	76 (91)	Douglas-fir	7,630
	Ponderosa pine	119	Ponderosa pine	65	Ponderosa pine	90 (40)	Ponderosa pine	7,270
413:								
Scoap	Douglas-fir	79	Douglas-fir	75	Douglas-fir	59 (98)	Douglas-fir	5,890
	Ponderosa pine	98	Ponderosa pine	75	Ponderosa pine	74 (40)	Ponderosa pine	5,860
414:								
Scoap	Douglas-fir	79	Douglas-fir	75	Douglas-fir	59 (98)	Douglas-fir	5,890
	Ponderosa pine	98	Ponderosa pine	75	Ponderosa pine	74 (40)	Ponderosa pine	5,860
415:								
Scoap	Douglas-fir	79	Douglas-fir	75	Douglas-fir	59 (98)	Douglas-fir	5,890
	Ponderosa pine	98	Ponderosa pine	75	Ponderosa pine	74 (40)	Ponderosa pine	5,860
Rock outcrop.								
416:								
Scoap	Douglas-fir	79	Douglas-fir	75	Douglas-fir	59 (98)	Douglas-fir	5,890
	Ponderosa pine	98	Ponderosa pine	75	Ponderosa pine	74 (40)	Ponderosa pine	5,860

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
416:								
Rock outcrop.								
417:								
Scrabblers	Douglas-fir	73	Douglas-fir	75	Douglas-fir	50 (101)	Douglas-fir	5,030
	Grand fir	78	Grand fir	50	Grand fir	55 (108)	Grand fir	5,460
418:								
Scrabblers	Douglas-fir	73	Douglas-fir	75	Douglas-fir	50 (101)	Douglas-fir	5,030
	Grand fir	78	Grand fir	50	Grand fir	55 (108)	Grand fir	5,460
419:								
Scrabblers	Douglas-fir	77	Douglas-fir	90	Douglas-fir	67 (99)	Douglas-fir	6,720
	Ponderosa pine	91	Ponderosa pine	65	Ponderosa pine	57 (40)	Ponderosa pine	4,450
420:								
Scrabblers	Douglas-fir	77	Douglas-fir	90	Douglas-fir	67 (99)	Douglas-fir	6,720
	Ponderosa pine	91	Ponderosa pine	65	Ponderosa pine	57 (40)	Ponderosa pine	4,450
421:								
Sitdown	Lodgepole pine	85	Lodgepole pine	---	Lodgepole pine	98 (100)	Lodgepole pine	---
	Subalpine fir	85	Subalpine fir	---	Subalpine fir	84 (95)	Subalpine fir	---
	Western larch	65	Western larch	60	Western larch	55 (70)	Western larch	4,350
428:								
Skanid	Douglas-fir	51	Douglas-fir	85	Douglas-fir	26 (115)	Douglas-fir	2,590
	Ponderosa pine	65	Ponderosa pine	50	Ponderosa pine	25 (55)	Ponderosa pine	1,970
429:								
Skanid	Douglas-fir	51	Douglas-fir	85	Douglas-fir	26 (115)	Douglas-fir	2,590
	Ponderosa pine	64	Ponderosa pine	50	Ponderosa pine	25 (55)	Ponderosa pine	1,970
430:								
Skanid	Douglas-fir	51	Douglas-fir	85	Douglas-fir	26 (115)	Douglas-fir	2,590
	Ponderosa pine	64	Ponderosa pine	50	Ponderosa pine	25 (55)	Ponderosa pine	1,970
431:								
Skanid	Ponderosa pine	64	Ponderosa pine	55	Ponderosa pine	28 (55)	Ponderosa pine	2,160
432:								
Skanid	Ponderosa pine	64	Ponderosa pine	55	Ponderosa pine	28 (55)	Ponderosa pine	2,160
433:								
Skanid	Ponderosa pine	64	Ponderosa pine	55	Ponderosa pine	28 (55)	Ponderosa pine	2,160

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
434:								
Skanid	Douglas-fir	51	Douglas-fir	85	Douglas-fir	26 (115)	Douglas-fir	2,590
	Ponderosa pine	64	Ponderosa pine	50	Ponderosa pine	25 (55)	Ponderosa pine	1,970
Rock outcrop.								
435:								
Skanid	Douglas-fir	51	Douglas-fir	85	Douglas-fir	26 (115)	Douglas-fir	2,590
	Ponderosa pine	64	Ponderosa pine	50	Ponderosa pine	25 (55)	Ponderosa pine	1,970
Rock outcrop.								
436:								
Skanid	Ponderosa pine	64	Ponderosa pine	55	Ponderosa pine	28 (55)	Ponderosa pine	2,160
Rock outcrop.								
437:								
Spens	Ponderosa pine	62	Ponderosa pine	60	Ponderosa pine	29 (55)	Ponderosa pine	2,250
438:								
Spens	Ponderosa pine	62	Ponderosa pine	60	Ponderosa pine	29 (55)	Ponderosa pine	2,250
439:								
Spokane	Ponderosa pine	93	Ponderosa pine	60	Ponderosa pine	54 (40)	Ponderosa pine	4,270
440:								
Spokane	Ponderosa pine	93	Ponderosa pine	60	Ponderosa pine	54 (40)	Ponderosa pine	4,270
441:								
Spokane	Ponderosa pine	93	Ponderosa pine	60	Ponderosa pine	54 (40)	Ponderosa pine	4,270
442:								
Spokane	Ponderosa pine	70	Ponderosa pine	55	Ponderosa pine	30 (50)	Ponderosa pine	2,460
443:								
Spokane	Ponderosa pine	70	Ponderosa pine	55	Ponderosa pine	30 (50)	Ponderosa pine	2,460
444:								
Spokane	Ponderosa pine	93	Ponderosa pine	60	Ponderosa pine	54 (40)	Ponderosa pine	4,270
Rock outcrop.								

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination			Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac	(age)	Species	Cu ft/ac
445:									
Spokane	Ponderosa pine	93	Ponderosa pine	60	Ponderosa pine	54	(40)	Ponderosa pine	4,270
Rock outcrop.									
446:									
Spokane	Ponderosa pine	70	Ponderosa pine	55	Ponderosa pine	30	(50)	Ponderosa pine	2,460
Skanid	Ponderosa pine	64	Ponderosa pine	55	Ponderosa pine	28	(55)	Ponderosa pine	2,160
447:									
Spokane	Ponderosa pine	70	Ponderosa pine	55	Ponderosa pine	30	(50)	Ponderosa pine	2,460
Skanid	Ponderosa pine	64	Ponderosa pine	55	Ponderosa pine	28	(55)	Ponderosa pine	2,160
448:									
Spokane	Ponderosa pine	70	Ponderosa pine	55	Ponderosa pine	30	(50)	Ponderosa pine	2,460
Skanid	Ponderosa pine	64	Ponderosa pine	55	Ponderosa pine	28	(55)	Ponderosa pine	2,160
449:									
Springdale	Ponderosa pine	81	Ponderosa pine	50	Ponderosa pine	36	(40)	Ponderosa pine	2,770
450:									
Springdale	Ponderosa pine	81	Ponderosa pine	50	Ponderosa pine	36	(40)	Ponderosa pine	2,770
451:									
Springdale	Ponderosa pine	81	Ponderosa pine	50	Ponderosa pine	36	(40)	Ponderosa pine	2,770
452:									
Stapaloop	Douglas-fir	83	Douglas-fir	85	Douglas-fir	75	(95)	Douglas-fir	7,440
	Ponderosa pine	108	Ponderosa pine	60	Ponderosa pine	71	(40)	Ponderosa pine	5,590
	Western larch	78	Western larch	70	Western larch	83	(70)	Western larch	7,530
453:									
Stapaloop	Douglas-fir	83	Douglas-fir	85	Douglas-fir	75	(95)	Douglas-fir	7,440
	Western larch	78	Western larch	70	Western larch	83	(70)	Western larch	7,530
454:									
Stapaloop	Douglas-fir	75	Douglas-fir	70	Douglas-fir	50	(100)	Douglas-fir	4,960
	Ponderosa pine	81	Ponderosa pine	70	Ponderosa pine	50	(40)	Ponderosa pine	3,880
	Western larch	65	Western larch	60	Western larch	55	(70)	Western larch	4,350

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
455:								
Stepstone	Douglas-fir	77	Douglas-fir	70	Douglas-fir	53 (99)	Douglas-fir	5,230
	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
456:								
Stepstone	Douglas-fir	77	Douglas-fir	70	Douglas-fir	53 (99)	Douglas-fir	5,230
	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
457:								
Stepstone	Douglas-fir	77	Douglas-fir	70	Douglas-fir	53 (99)	Douglas-fir	5,230
	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
458:								
Stepstone	Douglas-fir	77	Douglas-fir	70	Douglas-fir	53 (99)	Douglas-fir	5,230
	Ponderosa pine	95	Ponderosa pine	60	Ponderosa pine	56 (40)	Ponderosa pine	4,440
	Western larch	70	Western larch	60	Western larch	61 (70)	Western larch	5,090
459:								
Stevens	Ponderosa pine	114	Ponderosa pine	70	Ponderosa pine	91 (40)	Ponderosa pine	7,220
460:								
Stevens	Ponderosa pine	114	Ponderosa pine	70	Ponderosa pine	91 (40)	Ponderosa pine	7,220
461:								
Stevens	Ponderosa pine	114	Ponderosa pine	70	Ponderosa pine	91 (40)	Ponderosa pine	7,220
462:								
Stevens	Ponderosa pine	114	Ponderosa pine	70	Ponderosa pine	91 (40)	Ponderosa pine	7,220
468:								
Swipkin	Ponderosa pine	94	Ponderosa pine	60	Ponderosa pine	55 (40)	Ponderosa pine	4,350
469:								
Swipkin	Ponderosa pine	94	Ponderosa pine	60	Ponderosa pine	55 (40)	Ponderosa pine	4,350
470:								
Thout	Douglas-fir	50	Douglas-fir	75	Douglas-fir	22 (116)	Douglas-fir	2,180
	Ponderosa pine	65	Ponderosa pine	50	Ponderosa pine	25 (50)	Ponderosa pine	2,010

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percent-age of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
471:								
Thout	Douglas-fir	50	Douglas-fir	75	Douglas-fir	22 (50)	Douglas-fir	2,180
	Ponderosa pine	65	Ponderosa pine	50	Ponderosa pine	25 (50)	Ponderosa pine	2,010
Rock outcrop.								
472:								
Thout	Douglas-fir	50	Douglas-fir	75	Douglas-fir	22 (116)	Douglas-fir	2,180
	Ponderosa pine	65	Ponderosa pine	50	Ponderosa pine	25 (50)	Ponderosa pine	2,010
Rock outcrop.								
473:								
Thout	Douglas-fir	50	Douglas-fir	75	Douglas-fir	22 (116)	Douglas-fir	2,180
	Ponderosa pine	65	Ponderosa pine	50	Ponderosa pine	25 (50)	Ponderosa pine	2,010
Rock outcrop.								
480:								
Togo	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	75	Subalpine fir	---	Subalpine fir	70 (105)	Subalpine fir	---
	Western larch	44	Western larch	90	Western larch	48 (70)	Western larch	2,560
481:								
Togo	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	75	Subalpine fir	---	Subalpine fir	70 (105)	Subalpine fir	---
	Western larch	44	Western larch	90	Western larch	48 (70)	Western larch	2,560
482:								
Togo	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	75	Subalpine fir	---	Subalpine fir	70 (105)	Subalpine fir	---
	Western larch	44	Western larch	90	Western larch	48 (70)	Western larch	2,560
483:								
Togo	Douglas-fir	54	Douglas-fir	75	Douglas-fir	26 (114)	Douglas-fir	2,600
	Subalpine fir	75	Subalpine fir	---	Subalpine fir	70 (105)	Subalpine fir	---
484:								
Togo	Lodgepole pine	77	Lodgepole pine	---	Lodgepole pine	83 (100)	Lodgepole pine	---
	Subalpine fir	75	Subalpine fir	---	Subalpine fir	70 (105)	Subalpine fir	---
	Western larch	44	Western larch	90	Western larch	48 (70)	Western larch	2,560
Rock outcrop.								

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
485:								
Torboy	Douglas-fir	72	Douglas-fir	75	Douglas-fir	49 (102)	Douglas-fir	4,880
	Ponderosa pine	93	Ponderosa pine	65	Ponderosa pine	61 (40)	Ponderosa pine	4,630
486:								
Torboy	Douglas-fir	72	Douglas-fir	75	Douglas-fir	49 (102)	Douglas-fir	4,880
	Ponderosa pine	93	Ponderosa pine	65	Ponderosa pine	61 (40)	Ponderosa pine	4,630
488:								
Tunkcreek	Engelmann spruce	90	Engelmann spruce	---	Engelmann spruce	91 (90)	Engelmann spruce	---
	Lodgepole pine	85	Lodgepole pine	---	Lodgepole pine	98 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	68	Western larch	85	Western larch	82 (70)	Western larch	6,790
489:								
Tunkcreek	Engelmann spruce	90	Engelmann spruce	---	Engelmann spruce	91 (90)	Engelmann spruce	---
	Lodgepole pine	85	Lodgepole pine	---	Lodgepole pine	98 (100)	Lodgepole pine	---
	Subalpine fir	90	Subalpine fir	---	Subalpine fir	91 (90)	Subalpine fir	---
	Western larch	68	Western larch	85	Western larch	82 (70)	Western larch	6,790
497:								
Typic Xerorthents	Ponderosa pine	75	Ponderosa pine	50	Ponderosa pine	30 (45)	Ponderosa pine	2,500
Typic Xerochrepts	Ponderosa pine	95	Ponderosa pine	50	Ponderosa pine	45 (40)	Ponderosa pine	3,700
498:								
Ultic Haploxerolls	Ponderosa pine	85	Ponderosa pine	60	Ponderosa pine	45 (40)	Ponderosa pine	3,600
499:								
Uncas	Quaking aspen	40	Quaking aspen	---	Quaking aspen	30 (100)	Quaking aspen	---
500:								
Vanbrunt	Ponderosa pine	76	Ponderosa pine	45	Ponderosa pine	28 (45)	Ponderosa pine	2,270
Rock outcrop.								
501:								
Vanbrunt	Ponderosa pine	76	Ponderosa pine	45	Ponderosa pine	28 (45)	Ponderosa pine	2,270
Rock outcrop.								
502:								
Vanbrunt	Ponderosa pine	76	Ponderosa pine	45	Ponderosa pine	28 (45)	Ponderosa pine	2,270

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
502:								
Rock outcrop.								
505:								
Wapal	Douglas-fir	72	Douglas-fir	70	Douglas-fir	45 (102)	Douglas-fir	4,560
	Ponderosa pine	85	Ponderosa pine	45	Ponderosa pine	35 (40)	Ponderosa pine	2,730
506:								
Wapal	Douglas-fir	72	Douglas-fir	70	Douglas-fir	45 (102)	Douglas-fir	4,560
	Ponderosa pine	85	Ponderosa pine	45	Ponderosa pine	35 (40)	Ponderosa pine	2,730
507:								
Wapal	Douglas-fir	72	Douglas-fir	70	Douglas-fir	45 (102)	Douglas-fir	4,560
	Ponderosa pine	85	Ponderosa pine	45	Ponderosa pine	35 (40)	Ponderosa pine	2,730
508:								
Wapal	Douglas-fir	72	Douglas-fir	70	Douglas-fir	45 (102)	Douglas-fir	4,560
	Ponderosa pine	85	Ponderosa pine	45	Ponderosa pine	35 (40)	Ponderosa pine	2,730
509:								
Wellscreek	Douglas-fir	62	Douglas-fir	60	Douglas-fir	28 (109)	Douglas-fir	2,810
	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
510:								
Wellscreek	Douglas-fir	62	Douglas-fir	60	Douglas-fir	28 (109)	Douglas-fir	2,810
	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
511:								
Wellscreek	Douglas-fir	62	Douglas-fir	60	Douglas-fir	28 (109)	Douglas-fir	2,810
	Ponderosa pine	90	Ponderosa pine	55	Ponderosa pine	47 (40)	Ponderosa pine	3,690
512:								
Whitestone	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
513:								
Whitestone	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
514:								
Whitestone	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
515:								
Whitestone	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900

Table 10.--Forest Overstory Production--Continued

Soil name and map symbol	Mean site index		Typical basal area		Estimated growth at culmination		Estimated yield at age 100 (adjusted by basal area)	
	Species	Index	Species	Percentage of normal	Species	Cu ft/ac (age)	Species	Cu ft/ac
516:								
Whitestone	Ponderosa pine	88	Ponderosa pine	45	Ponderosa pine	37 (40)	Ponderosa pine	2,900
Rock outcrop.								
517:								
Wilmont	Douglas-fir	81	Douglas-fir	75	Douglas-fir	62 (96)	Douglas-fir	6,210
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
518:								
Wilmont	Douglas-fir	81	Douglas-fir	75	Douglas-fir	62 (96)	Douglas-fir	6,210
	Ponderosa pine	100	Ponderosa pine	60	Ponderosa pine	61 (40)	Ponderosa pine	4,850
519:								
Wilmont	Douglas-fir	83	Douglas-fir	70	Douglas-fir	62 (95)	Douglas-fir	6,130
	Grand fir	98	Grand fir	50	Grand fir	75 (90)	Grand fir	7,400
520:								
Wilmont	Douglas-fir	83	Douglas-fir	70	Douglas-fir	62 (95)	Douglas-fir	6,130
	Grand fir	98	Grand fir	50	Grand fir	75 (90)	Grand fir	7,400
525:								
Winthrop	Ponderosa pine	73	Ponderosa pine	40	Ponderosa pine	24 (45)	Ponderosa pine	1,900
530:								
Xerochrepts	Douglas-fir	55	Douglas-fir	55	Douglas-fir	20 (113)	Douglas-fir	1,980
	Ponderosa pine	70	Ponderosa pine	40	Ponderosa pine	22 (50)	Ponderosa pine	1,800
Rubble land.								
Rock outcrop.								

Table 11.--Forest Understory Production (Dry Weight)

(Only the soils that support woodland vegetation are rated.)

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
6:				
Aits	300	600	100	2,100
7:				
Aits	300	600	100	2,100
8:				
Aits	300	600	100	2,100
10:				
Andic Cryaquepts	500	350	250	2,100
14:				
Apex	550	450	150	1,050
15:				
Apex	550	450	150	1,050
16:				
Apex	550	450	150	1,050
17:				
Apex	550	450	150	1,050
18:				
Apex	550	450	150	1,050
19:				
Apex	550	450	150	1,050
20:				
Aquic Xerofluvents	800	250	---	1,200
21:				
Aquic Xerofluvents	100	150	75	1,600
22:				
Aquic Xerofluvents	---	800	250	1,200
29:				
Baldknob.				
Thout	500	550	250	500
Rock outcrop.				
30:				
Baldknob.				
Thout	500	550	250	500
Rock outcrop.				
31:				
Barnellcreek	500	550	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
32:				
Bearspring	550	450	150	1,050
33:				
Bearspring	550	450	150	1,050
34:				
Bernhill	500	550	250	500
35:				
Bernhill	500	550	250	500
37:				
Bisbee	450	---	50	450
38:				
Bisbee	450	---	50	450
39:				
Boesel	---	800	200	1,200
40:				
Bong	400	---	50	400
41:				
Bong	400	---	50	400
42:				
Bong	600	500	250	650
47:				
Bossburg	---	1,400	300	2,000
50:				
Brusher	300	600	100	2,100
51:				
Brusher	350	650	150	2,100
52:				
Brusher	550	450	150	1,050
53:				
Brusher	550	450	150	1,050
54:				
Buhrig	200	250	200	1,800
55:				
Buhrig	200	250	200	1,800
56:				
Buhrig	500	350	250	2,100
57:				
Buhrig	200	250	200	1,800
Rock outcrop.				
58:				
Buhrig	200	250	200	1,800

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
58:				
Rock outcrop.				
59:				
Canteen	550	450	150	1,050
60:				
Canteen	550	450	150	1,050
61:				
Canteen	300	600	250	2,100
62:				
Canteen	300	600	250	2,100
63:				
Capoose	550	450	150	1,050
64:				
Capoose	550	450	150	1,050
65:				
Capoose	550	450	150	1,050
Rock outcrop.				
66:				
Capoose	550	450	150	1,050
Rock outcrop.				
73:				
Cedonia	500	550	250	500
74:				
Cedonia	500	550	250	500
75:				
Cedonia	500	550	250	500
76:				
Cedonia	600	500	250	650
77:				
Centralpeak	550	450	150	1,050
Centralpeak	900	850	300	950
78:				
Centralpeak	550	450	150	1,050
Centralpeak	900	850	300	950
79:				
Centralpeak	550	450	150	1,050
Centralpeak	900	850	300	950
80:				
Centralpeak	900	850	300	950

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
81:				
Centralpeak	900	850	300	950
82:				
Centralpeak	900	850	300	950
83:				
Centralpeak	900	850	300	950
Brusher	350	650	150	2,100
84:				
Centralpeak	550	450	150	1,050
Centralpeak	900	850	300	950
Rock outcrop.				
85:				
Chumstick	450	---	50	450
Rock outcrop.				
86:				
Chumstick	450	---	50	450
Rock outcrop.				
87:				
Codylake	200	250	200	1,800
88:				
Codylake	200	250	200	1,800
89:				
Codylake	200	250	200	1,800
104:				
Coxlake	---	800	100	1,200
105:				
Cryofluvents	500	350	250	2,100
106:				
Cubcreek	---	600	100	1,200
108:				
Dart	600	---	50	600
109:				
Dart	600	---	50	600
110:				
Dart	600	---	50	600
Springdale	450	---	250	500
111:				
Dart	600	---	50	600
Springdale	450	---	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
112:				
Dehart	500	---	50	500
113:				
Dehart	500	---	50	500
114:				
Dehart	500	---	50	500
Phoebe	500	---	50	500
115:				
Dehart	500	---	50	500
Rock outcrop.				
116:				
Dehart	500	---	50	500
Rock outcrop.				
117:				
Dinkelman	500	550	250	500
118:				
Dinkelman	500	550	250	500
119:				
Dinkelman	500	550	250	500
124:				
Donavan	450	---	50	450
125:				
Donavan	450	---	50	450
126:				
Donavan	450	---	50	450
127:				
Donavan	450	---	50	450
128:				
Donavan	500	550	250	500
129:				
Donavan	500	550	250	500
130:				
Donavan	500	550	250	500
131:				
Donavan	500	550	250	500
132:				
Donavan	500	550	250	500
133:				
Donavan	500	550	250	500
Goldlake	---	700	200	1,000

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
134:				
Donavan	500	550	250	500
Northstar	550	---	50	550
135:				
Donavan	450	---	50	450
Rock outcrop.				
136:				
Donavan	500	550	250	500
Rock outcrop.				
137:				
Donavan	500	550	250	500
Rock outcrop.				
138:				
Donavan	450	---	50	450
Rock outcrop.				
140:				
Elbowlake	300	600	100	2,100
141:				
Elbowlake	300	600	100	2,100
142:				
Elbowlake	300	600	100	2,100
143:				
Elbowlake	550	450	150	1,050
144:				
Elbowlake	550	450	150	1,050
145:				
Elbowlake	550	450	150	1,050
155:				
Ewall	400	---	30	600
156:				
Ewall	400	---	30	600
169:				
Friedlander	550	450	150	1,050
170:				
Friedlander	550	450	150	1,050
171:				
Friedlander	900	850	300	950
172:				
Garrison	500	550	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
173:				
Garrison	500	550	250	500
174:				
Garrison	500	550	250	500
175:				
Georgecreek	500	550	250	500
176:				
Georgecreek	500	550	250	500
177:				
Georgecreek	450	---	50	650
178:				
Georgecreek	450	---	50	650
187:				
Glenrose	500	550	250	500
188:				
Glenrose	500	550	250	500
189:				
Goddard	900	850	300	950
190:				
Goddard	900	850	300	950
191:				
Goddard	900	850	300	950
192:				
Goldlake	---	700	100	1,000
194:				
Growden	1,050	1,100	250	1,350
199:				
Hallcreek	500	550	250	500
201:				
Hartill	300	600	100	2,100
202:				
Hartill	300	600	100	2,100
203:				
Hellgate	300	---	50	300
204:				
Hellgate	500	550	250	500
205:				
Henneway	300	600	100	2,100
206:				
Henneway	300	600	100	2,100
207:				
Henneway	550	450	150	1,050

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
212:				
Hodgson	500	550	250	500
213:				
Hodgson	500	550	250	500
214:				
Hodgson	500	550	250	500
215:				
Hodgson	500	550	250	500
216:				
Hudnut	500	550	250	500
217:				
Hudnut	500	550	250	500
218:				
Hunters	500	550	250	500
220:				
Inchelium	500	550	250	500
221:				
Inchelium	500	550	250	500
222:				
Inkler	550	450	150	1,050
223:				
Inkler	550	450	150	1,050
224:				
Inkler	550	450	150	1,050
225:				
Inkler	550	450	150	1,050
Baldknob.				
Rock outcrop.				
226:				
Inkler	550	450	150	1,050
Baldknob.				
Rock outcrop.				
227:				
Inkler	550	450	150	1,050
Rock outcrop.				
228:				
Inkler	550	450	150	1,050
Rock outcrop.				
229:				
Jimcreek	---	700	200	1,000

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
231:				
Karamin	500	550	250	500
232:				
Karamin	500	550	250	500
233:				
Karamin	500	550	250	500
234:				
Kartar	450	---	50	450
235:				
Kellerbutte	550	450	150	1,050
236:				
Kellerbutte	550	450	150	1,050
237:				
Kenotrail	900	850	300	950
238:				
Kewach	550	450	150	1,050
239:				
Kewach	550	450	150	1,050
240:				
Kewach	550	450	150	1,050
241:				
Kewach	550	450	150	1,050
242:				
Kiehl	550	450	150	1,050
243:				
Kiehl	550	450	150	1,050
244:				
Kiehl	550	450	150	1,050
245:				
Kiehl	300	600	100	2,100
246:				
Kiehl	300	600	100	2,100
247:				
Kiehl	300	600	100	2,100
248:				
Koepke	500	550	250	500
249:				
Lakesol	500	550	250	500
253:				
Loony	900	850	300	950
254:				
Lostcreek	---	650	50	1,000

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
255:				
Louiecreek-------	500	550	250	500
256:				
Louploup---------	900	850	300	950
257:				
Louploup---------	900	850	300	950
258:				
Lynxcreek--------	500	350	250	2,100
267:				
Manley-----------	200	250	200	1,800
268:				
Manley-----------	200	250	200	1,800
269:				
Manley-----------	200	250	200	1,800
270:				
Manley-----------	200	250	200	1,800
Codylake---------	200	250	200	1,800
271:				
Manley-----------	200	250	200	2,800
Rock outcrop.				
272:				
Manley-----------	200	250	200	1,800
Rock outcrop.				
273:				
Martella---------	300	600	100	2,100
274:				
Martella---------	900	850	300	950
275:				
Martella---------	900	850	300	950
276:				
Medisaprists-----	---	1,500	100	3,000
277:				
Merkel-----------	900	850	300	950
278:				
Merkel-----------	900	850	300	950
279:				
Merkel-----------	900	850	300	950
280:				
Merkel-----------	500	550	250	500
281:				
Merkel-----------	500	550	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
282:				
Mineral	500	550	250	500
283:				
Mineral	500	550	250	500
284:				
Mineral	500	550	250	500
Rock outcrop.				
285:				
Mineral	500	550	250	500
Rock outcrop.				
286:				
Mineral	500	550	250	500
Rock outcrop.				
287:				
Mineral	550	450	150	1,050
Rock outcrop.				
288:				
Mitchellpoint	500	550	250	500
293:				
Moscow	300	600	100	2,100
294:				
Moscow	300	600	100	2,100
295:				
Moses	200	250	200	1,800
296:				
Moses	200	250	200	1,800
297:				
Moses	150	200	100	1,600
298:				
Moses	150	200	100	500
299:				
Narcisse	---	800	150	1,200
300:				
Narcisse	---	800	150	1,200
305:				
Neuske	500	550	250	500
306:				
Neuske	500	550	250	500
307:				
Nevine	900	850	300	950
Nevine	550	500	150	1,050

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
308:				
Nevine	900	850	300	950
Nevine	550	500	150	1,050
309:				
Nevine	900	850	300	950
Nevine	550	500	150	1,050
310:				
Nevine	900	850	300	950
Nevine	550	500	150	1,050
Rock outcrop.				
311:				
Nevine	900	850	300	950
Nevine	550	500	150	1,050
Rock outcrop.				
312:				
Newbell	300	600	100	2,100
313:				
Newbell	300	600	100	2,100
314:				
Newbell	300	600	100	2,100
315:				
Northstar	550	---	50	550
316:				
Northstar	550	---	50	550
317:				
Northstar	350	---	50	350
Johntom.				
Rock outcrop.				
318:				
Northstar	350	---	50	350
Johntom.				
Rock outcrop.				
319:				
Northstar	350	---	50	350
Louiecreek	500	550	250	500
Rock outcrop.				
320:				
Northstar	350	---	50	350

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
320:				
Louiecreek	500	550	250	500
Rock outcrop.				
321:				
Northstar	350	---	50	350
Rock outcrop.				
322:				
Ohscow	900	850	300	950
323:				
Ohscow	900	850	300	950
324:				
Ohscow	300	600	100	2,100
325:				
Ohscow	300	600	100	2,100
327:				
Omak	600	500	250	650
331:				
Oxerine	550	450	150	1,050
332:				
Oxerine	550	450	150	1,050
333:				
Oxerine	550	450	150	1,050
334:				
Oxerine	550	450	150	1,050
Rock outcrop.				
335:				
Oxerine	550	450	150	1,050
Rock outcrop.				
336:				
Parmenter	900	850	300	950
337:				
Parmenter	900	850	300	950
338:				
Parmenter	900	850	300	950
339:				
Parmenter	900	850	300	950
343:				
Phoebe	500	550	250	500
344:				
Phoebe	500	550	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
345:				
Phoebe	500	550	250	500
346:				
Phoebe	500	550	250	500
347:				
Phoebe	500	---	50	500
348:				
Phoebe	500	---	50	500
349:				
Phoebe	500	---	50	500
350:				
Phoebe	500	---	50	500
Dehart	500	---	50	500
361:				
Quincy	500	---	---	---
368:				
Raisio	450	---	50	450
369:				
Raisio	450	---	50	450
Rock outcrop.				
370:				
Raisio	550	450	150	1,050
Rufus	500	---	100	500
371:				
Raisio	550	450	150	1,050
Rufus	500	---	100	500
372:				
Raisio	450	---	50	450
Rufus	400	---	---	---
373:				
Raisio	450	---	50	450
Rufus	400	---	---	---
Rock outcrop.				
376:				
Ralsen	---	700	150	1,000
378:				
Reardan	450	---	100	550
379:				
Reardan	450	---	100	550

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
382:				
Renha	300	600	100	2,100
383:				
Renha	300	600	100	2,100
384:				
Renha	550	450	150	1,050
Oxerine	550	450	150	1,050
385:				
Republic	500	550	250	500
386:				
Republic	500	550	250	500
387:				
Republic	500	550	250	500
388:				
Resner	500	350	250	2,100
389:				
Resner	500	350	250	2,100
390:				
Ret	---	700	100	1,200
393:				
Rock outcrop.				
Chumstick	300	---	---	300
394:				
Rock outcrop.				
Chumstick	500	---	---	500
395:				
Rock outcrop.				
Mineral	500	550	250	500
396:				
Rock outcrop.				
Rufus	500	---	100	500
399:				
Rock outcrop.				
Vanbrunt	800	---	50	800
405:				
Sacheen	500	550	250	500
406:				
Sacheen	500	550	250	500
407:				
Sacheen	500	550	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
408:				
Sanpoil	---	700	150	1,200
409:				
Sanpoil	---	800	150	1,200
410:				
Scala	500	550	250	500
411:				
Sclome	---	700	150	1,200
412:				
Scoap	500	550	250	500
413:				
Scoap	500	550	250	500
414:				
Scoap	500	550	250	500
415:				
Scoap	500	550	250	500
Rock outcrop.				
416:				
Scoap	500	550	250	500
Rock outcrop.				
417:				
Scrabblers	300	600	100	2,100
418:				
Scrabblers	300	600	100	2,100
419:				
Scrabblers	900	850	300	950
420:				
Scrabblers	900	850	300	950
421:				
Sitdown	200	250	200	1,800
428:				
Skanid	500	---	50	500
429:				
Skanid	500	---	50	500
430:				
Skanid	500	---	50	500
431:				
Skanid	600	---	50	600
432:				
Skanid	600	---	50	600
433:				
Skanid	600	---	50	600

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
434:				
Skanid	500	---	50	500
Rock outcrop.				
435:				
Skanid	500	---	50	500
Rock outcrop.				
436:				
Skanid	600	---	50	600
Rock outcrop.				
437:				
Spens	300	---	20	300
438:				
Spens	300	---	20	300
439:				
Spokane	500	550	250	500
440:				
Spokane	500	550	250	500
441:				
Spokane	500	550	250	500
442:				
Spokane	700	---	50	700
443:				
Spokane	700	---	50	700
444:				
Spokane	500	550	250	500
Rock outcrop.				
445:				
Spokane	500	550	250	500
Rock outcrop.				
446:				
Spokane	700	---	50	700
Skanid	600	---	50	600
447:				
Spokane	700	---	50	700
Skanid	600	---	50	600
448:				
Spokane	700	---	50	700
Skanid	600	---	50	600
449:				
Springdale	450	---	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
450:				
Springdale	450	---	250	500
451:				
Springdale	450	---	250	500
452:				
Stapaloop	500	550	250	500
453:				
Stapaloop	500	550	250	500
454:				
Stapaloop	500	550	250	500
455:				
Stepstone	900	850	300	950
456:				
Stepstone	900	850	300	950
457:				
Stepstone	900	850	300	950
458:				
Stepstone	900	850	300	950
459:				
Stevens	500	550	250	500
460:				
Stevens	500	550	250	500
461:				
Stevens	500	550	250	500
462:				
Stevens	500	550	250	500
468:				
Swipkin	500	550	250	500
469:				
Swipkin	500	550	250	500
470:				
Thout	500	550	250	500
471:				
Thout	500	550	250	500
Rock outcrop.				
472:				
Thout	500	550	250	500
Rock outcrop.				
473:				
Thout	500	550	250	500
Rock outcrop.				

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
480:				
Togo	200	250	200	1,800
481:				
Togo	200	250	200	1,800
482:				
Togo	200	250	200	1,800
483:				
Togo	1,050	1,100	250	1,350
484:				
Togo	200	250	200	1,800
Rock outcrop.				
485:				
Torboy	900	850	300	950
486:				
Torboy	900	850	300	950
488:				
Tunkcreek	500	350	250	2,100
489:				
Tunkcreek	500	350	250	2,100
497:				
Typic Xerorthents	---	500	200	550
Typic Xerochrepts	---	600	250	650
498:				
Ultic Haploxerolls	500	550	250	500
499:				
Uncas	---	550	150	1,200
500:				
Vanbrunt	750	---	50	750
Rock outcrop.				
501:				
Vanbrunt	750	---	50	750
Rock outcrop.				
502:				
Vanbrunt	750	---	50	750
Rock outcrop.				
505:				
Wapal	500	550	250	500
506:				
Wapal	500	550	250	500

Table 11.--Forest Understory Production (Dry Weight)--Continued

Soil name and map symbol	Successional stage			
	Mature forest	Young forest	Pole	Shrub
	Lbs/acre	*Lbs/acre*	*Lbs/acre*	*Lbs/acre*
507:				
Wapal	500	550	250	500
508:				
Wapal	500	550	250	500
509:				
Wellscreek	550	450	150	1,050
510:				
Wellscreek	550	450	150	1,050
511:				
Wellscreek	550	450	150	1,050
512:				
Whitestone	700	---	50	700
513:				
Whitestone	700	---	50	700
514:				
Whitestone	700	---	50	700
515:				
Whitestone	550	---	50	550
516:				
Whitestone	700	---	50	700
Rock outcrop.				
517:				
Wilmont	550	450	150	1,050
518:				
Wilmont	550	450	150	1,050
519:				
Wilmont	300	600	100	2,100
520:				
Wilmont	300	600	100	2,100
525:				
Winthrop	400	---	50	400
530:				
Xerochrepts	500	---	---	---
Rubble land.				
Rock outcrop.				

Table 12.--Windbreaks and Environmental Plantings

(Only the soils suited to windbreaks and environmental plantings are listed. Absence of an entry indicates that trees generally do not grow to the given height.)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
1: Achimin	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive	Siberian elm, green ash, Austrian pine, ponderosa pine	Scotch pine, black locust	---
2: Achimin	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive	Siberian elm, green ash, Austrian pine, ponderosa pine	Scotch pine, black locust	---
Calcic Pachic Haploxerolls	Peking cotoneaster, European privet	Siberian peashrub, Tatarian honeysuckle, lilac, Rocky Mountain juniper	Russian olive	Austrian pine, green ash, ponderosa pine, Scotch pine	Black locust
3: Aeneas	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, black locust, green ash, Lombardy poplar
4: Aeneas	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, black locust, green ash, Lombardy poplar
5: Ahtanum	Siberian peashrub	Lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, black locust, Lombardy poplar
11: Annum	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
12:					
Annum	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
13:					
Annum	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
Annum	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
23:					
Badge	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
24:					
Badge	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Rubble land	---	---	---	---	---
27:					
Bakeoven	---	---	---	---	---
Olical	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
28:					
Bakeoven	---	---	---	---	---
Timentwa	Siberian peashrub, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Tatarian honeysuckle, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
28: Rock outcrop	---	---	---	---	---
36: Beverly	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
37: Bisbee	Siberian peashrub, Tatarian honeysuckle, blue spruce, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
38: Bisbee	Siberian peashrub, Tatarian honeysuckle, blue spruce, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
48: Broadax	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
49: Broadax	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
67: Cashmere	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
68:					
Cashmere	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
69:					
Cashmere	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
70:					
Cashmere	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
71:					
Cashmont	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
72:					
Cashmont	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
90:					
Colockum	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
91:					
Colockum	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
92:					
Colockum	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
93:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
94:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
95:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
96:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
97:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
98:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
99:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Bakeoven	---	---	---	---	---
100:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Rock outcrop	---	---	---	---	---
101:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Rock outcrop	---	---	---	---	---
102:					
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Swakane	---	---	---	---	---
Rock outcrop	---	---	---	---	---
107:					
Cumulic Haploxerolls	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive	Austrian pine, Siberian elm, green ash, ponderosa pine, Scotch pine	Black locust	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
108:					
Dart	Siberian peashrub, Tatarian honeysuckle, blue spruce, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
109:					
Dart	Siberian peashrub, Tatarian honeysuckle, blue spruce, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
110:					
Dart	Siberian peashrub, Tatarian honeysuckle, blue spruce, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Springdale	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
111:					
Dart	Siberian peashrub, Tatarian honeysuckle, blue spruce, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Springdale	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
120:					
Disautel	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
121:					
Disautel	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
122:					
Disautel	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
Nespelem	Peking cotoneaster, redosier dogwood	Nanking cherry, Siberian peashrub	Rocky Mountain juniper, blue spruce	Russian olive	Douglas-fir, golden willow, Austrian pine, black locust, Lombardy poplar
123:					
Disautel	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
Rock outcrop	---	---	---	---	---
139:					
Duleylake	Peking cotoneaster, European privet	Siberian peashrub, Tatarian honeysuckle, lilac, Rocky Mountain juniper	Russian olive	Austrian pine, green ash, ponderosa pine, Scotch pine	Black locust
146:					
Ellisforde	Nanking cherry, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, ponderosa pine	Scotch pine, black locust	---
147:					
Ellisforde	Nanking cherry, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, ponderosa pine	Scotch pine, black locust	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
148:					
Ellisforde	Nanking cherry, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, ponderosa pine	Scotch pine, black locust	---
149:					
Elvedere	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, eastern redcedar	Russian olive	Golden willow, Scotch pine, ponderosa pine, black locust, green ash, Lombardy poplar
150:					
Elvedere	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, eastern redcedar	Russian olive	Golden willow, Scotch pine, ponderosa pine, black locust, green ash, Lombardy poplar
151:					
Elvedere	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, eastern redcedar	Russian olive	Golden willow, Scotch pine, ponderosa pine, black locust, green ash, Lombardy poplar
152:					
Elvedere	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, eastern redcedar	Russian olive	Golden willow, Scotch pine, ponderosa pine, black locust, green ash, Lombardy poplar
Leahy	---	---	---	---	---
153:					
Emdent	Tatarian honeysuckle, lilac	Siberian peashrub	Russian olive, golden willow	Black willow, green ash, Siberian elm, black locust	Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
154:					
Emdent	Tatarian honeysuckle, lilac	Siberian peashrub	Russian olive, golden willow	Black willow, green ash, Siberian elm, black locust	Lombardy poplar
155:					
Ewall	Nanking cherry, skunkbush sumac, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, eastern redcedar	Scotch pine, ponderosa pine, black locust	---	---
156:					
Ewall	Nanking cherry, skunkbush sumac, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, eastern redcedar	Scotch pine, ponderosa pine, black locust	---	---
157:					
Ewall	Nanking cherry, skunkbush sumac, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, eastern redcedar	Scotch pine, ponderosa pine, black locust	---	---
158:					
Ewall	Nanking cherry, skunkbush sumac, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, eastern redcedar	Scotch pine, ponderosa pine, black locust	---	---
159:					
Ewall	Nanking cherry, skunkbush sumac, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, eastern redcedar	Scotch pine, ponderosa pine, black locust	---	---
160:					
Farrell	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

TTable 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
161: Farrell	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
162: Farrell	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
163: Farrell	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
165: Fivelakes	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive	Austrian pine, Siberian elm, green ash, ponderosa pine, Scotch pine	Black locust	---
179: Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
180: Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
181: Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
182:					
Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
183:					
Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
184:					
Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Conconully	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Austrian pine, Scotch pine, black locust, green ash, Lombardy poplar
185:					
Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Conconully	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
186:					
Ginnis	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Rock outcrop	---	---	---	---	---
195:					
Hadencreek	Peking cotoneaster, redosier dogwood	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, Russian olive	Austrian pine, green ash, ponderosa pine	Scotch pine, black locust
196:					
Haley	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
197:					
Haley	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
198:					
Haley	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
208:					
Heytou	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
Stubblefield	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
211:					
Hobohill	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, ponderosa pine, black locust, Lombardy poplar
252:					
Logy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, black locust, green ash, Lombardy poplar
259:					
Malott	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
260:					
Malott	Peking cotoneaster	Tatarian honeysuckle, lilac	Siberian peashrub, Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
261:					
Malott	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
262:					
Malott	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
263:					
Malott	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
264:					
Malott	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
Rock outcrop	---	---	---	---	---
265:					
Malott	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
Rock outcrop	---	---	---	---	---
266:					
Malott	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
Torriorthents	---	---	---	---	---
289:					
Monse	Nanking cherry, Siberian peashrub, Tatarian honeysuckle, lilac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, ponderosa pine	Scotch pine, black locust	---
290:					
Morical	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
291:					
Morical	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
292:					
Morical	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
301:					
Nespelem	Nanking cherry, Siberian peashrub, lilac	Rocky Mountain juniper, Douglas-fir, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
302:					
Nespelem	Nanking cherry, Siberian peashrub, lilac	Rocky Mountain juniper, Douglas-fir, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Nespelem	Nanking cherry, Siberian peashrub, lilac	Rocky Mountain juniper, Douglas-fir, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
303:					
Nespelem	Nanking cherry, Siberian peashrub, lilac	Rocky Mountain juniper, Douglas-fir, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Emdent	Tatarian honeysuckle, lilac	Siberian peashrub	Russian olive, golden willow	Black willow, green ash, Siberian elm, black locust	Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
304:					
Nespelem	Nanking cherry, Siberian peashrub, lilac	Rocky Mountain juniper, Douglas-fir, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Typic Xerorthents	---	---	---	---	---
326:					
Okanogan	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
328:					
Owhi	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
329:					
Owhi	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
330:					
Owhi	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Haley	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
340:					
Peshastin	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
341:					
Peshastin	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
342:					
Peshastin	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
351:					
Picard	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
352:					
Picard	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
354:					
Pogue	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
355:					
Pogue	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

TTable 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
356:					
Pogue	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
357:					
Pogue	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
358:					
Pogue	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
359:					
Pogue	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
360:					
Poween	Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper, eastern redcedar	Russian olive, Austrian pine, green ash	Siberian elm, ponderosa pine	Black locust
361:					
Quincy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
362:					
Quincy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
363:					
Quincy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
364:					
Quincy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
365:					
Quincy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
366:					
Quincy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
367:					
Quincy	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
367:					
Aeneas	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
378:					
Reardan	Peking cotoneaster, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, Austrian pine, green ash	Siberian elm, ponderosa pine, Scotch pine	Black locust
379:					
Reardan	Peking cotoneaster, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, Austrian pine, green ash	Siberian elm, ponderosa pine, Scotch pine	Black locust
380:					
Rebecca	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
381:					
Rebecca	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
422:					
Skaha	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
423:					
Skaha	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
424:					
Skaha	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
425:					
Skaha	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
426:					
Skaha	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
427:					
Skaha	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar
Rock outcrop	---	---	---	---	---
464:					
Stubblefield	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
474:					
Timentwa	Siberian peashrub, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Tatarian honeysuckle, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
475:					
Timentwa	Siberian peashrub, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Tatarian honeysuckle, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
476:					
Timentwa	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
477:					
Timentwa	Siberian peashrub, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Tatarian honeysuckle, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Timentwa	Siberian peashrub, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Tatarian honeysuckle, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
479:					
Timentwa	Peking cotoneaster	Tatarian honeysuckle, Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Austrian pine, Scotch pine, black locust, green ash, Lombardy poplar
Bakeoven	---	---	---	---	---
Rock outcrop	---	---	---	---	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
493:					
Tyee	---	---	---	---	---
Morical	Siberian peashrub, Tatarian honeysuckle, lilac, skunkbush sumac	Rocky Mountain juniper, Russian olive, Siberian elm, green ash	Austrian pine, Scotch pine, ponderosa pine, black locust	---	---
Tyee	---	---	---	---	---
496:					
Typic Haplaquolls	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
503:					
Wannacott	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
504:					
Wannacott	Peking cotoneaster, Tatarian honeysuckle, skunkbush sumac	Siberian peashrub, lilac, Rocky Mountain juniper	Russian olive, green ash, Austrian pine	Scotch pine, ponderosa pine	Black locust
521:					
Winchester	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, ponderosa pine, black locust, Lombardy poplar
522:					
Winchester	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, ponderosa pine, black locust, Lombardy poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
523:					
Winchester	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, ponderosa pine, black locust, Lombardy poplar
524:					
Winchester	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Austrian pine, Scotch pine, ponderosa pine, black locust, Lombardy poplar
Rock outcrop	---	---	---	---	---
525:					
Winthrop	Peking cotoneaster	Siberian peashrub, lilac	Rocky Mountain juniper, blue spruce	Russian olive	Golden willow, Scotch pine, Austrian pine, black locust, green ash, Lombardy poplar

Table 13.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Achimin	90	Somewhat limited Shrink-swell	 0.50	Not limited		Somewhat limited Shrink-swell	 0.50
2:							
Achimin	60	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope	 1.00	Very limited Slope Shrink-swell	 1.00 0.50
Calcic Pachic Haploxerolls	30	Somewhat limited Slope	 0.63	Very limited Depth to saturated zone Slope	 1.00 0.63	Very limited Slope	 1.00
3:							
Aeneas	90	Not limited		Not limited		Not limited	
4:							
Aeneas	85	Not limited		Not limited		Very limited Slope	 1.00
5:							
Ahtanum	85	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone Depth to thin cemented pan	 1.00 0.90	Very limited Depth to saturated zone	 1.00
6:							
Aits	80	Somewhat limited Slope	 0.84	Somewhat limited Slope	 0.84	Very limited Slope	 1.00
7:							
Aits	80	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
8:							
Aits	85	Not limited		Not limited		Not limited	
9:							
Anders	85	Somewhat limited Depth to hard bedrock	 0.95	Very limited Depth to hard bedrock	 1.00	Somewhat limited Depth to hard bedrock	 0.95
10:							
Andic Cryaquepts	80	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00
11:							
Annum	85	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12:							
Annum	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
13:							
Annum	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Annum	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
14:							
Apex	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
15:							
Apex	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
16:							
Apex	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
17:							
Apex	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
18:							
Apex	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
19:							
Apex	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
20:							
Aquic Xerofluvents	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
21:							
Aquic Xerofluvents	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
22:							
Aquic Xerofluvents	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
23:							
Badge	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.67	Content of large stones	0.67	Content of large stones	0.67

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24:							
Badge	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.67	Content of large stones	0.67	Content of large stones	0.67
Rubble land	20	Not rated		Not rated		Not rated	
25:							
Badland	100	Not rated		Not rated		Not rated	
26:							
Bakeoven	85	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
27:							
Bakeoven	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Olical	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.32		
28:							
Bakeoven	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Timentwa	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
29:							
Baldknob	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Thout	25	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.84	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30:							
Baldknob	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Thout	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
31:							
Barnellcreek	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.18	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.16	Slope	0.16	Depth to saturated zone	0.18
32:							
Bearspring	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
33:							
Bearspring	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
34:							
Bernhill	85	Not limited		Not limited		Not limited	
35:							
Bernhill	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
36:							
Beverly	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
37:							
Bisbee	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
38:							
Bisbee	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
39:							
Boesel	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	1.00		
40:							
Bong	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
41:							
Bong	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42:							
Bong	85	Not limited		Not limited		Not limited	
43:							
Borgeau	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
44:							
Borgeau	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
45:							
Borgeau	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
Borosaprists	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Content of organic matter	1.00		
47:							
Bossburg	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
48:							
Broadax	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
49:							
Broadax	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
50:							
Brusher	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
51:							
Brusher	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
52:							
Brusher	85	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
53:							
Brusher	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
54:							
Buhrig	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.29	Content of large stones	1.00	Depth to hard bedrock	0.29
55:							
Buhrig	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.29	Content of large stones	1.00	Depth to hard bedrock	0.29
56:							
Buhrig	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.35	Depth to hard bedrock	1.00	Depth to hard bedrock	0.35
		Content of large stones	0.03	Content of large stones	0.03	Content of large stones	0.03
57:							
Buhrig	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.29	Content of large stones	1.00	Depth to hard bedrock	0.29
Rock outcrop	20	Not rated		Not rated		Not rated	
58:							
Buhrig	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.29	Content of large stones	1.00	Depth to hard bedrock	0.29
Rock outcrop	20	Not rated		Not rated		Not rated	
59:							
Canteen	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
60:							
Canteen	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
61:							
Canteen	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
62:							
Canteen	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
63:							
Capoose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
64:							
Capoose	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
65:							
Capoose	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
Rock outcrop	15	Not rated		Not rated		Not rated	
66:							
Capoose	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
Rock outcrop	20	Not rated		Not rated		Not rated	
67:							
Cashmere	85	Not limited		Not limited		Not limited	
68:							
Cashmere	85	Not limited		Not limited		Very limited	
						Slope	1.00
69:							
Cashmere	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
70:							
Cashmere	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
71:							
Cashmont	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
72:							
Cashmont	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
73:							
Cedonia	80	Not limited		Not limited		Not limited	
74:							
Cedonia	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75:							
Cedonia	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
76:							
Cedonia	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
77:							
Centralpeak	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.46		
Centralpeak	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.46		
78:							
Centralpeak	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Centralpeak	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
79:							
Centralpeak	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Centralpeak	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
80:							
Centralpeak	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.46		
81:							
Centralpeak	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
82:							
Centralpeak	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
83:							
Centralpeak	65	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.46	Very limited Slope	1.00
Brusher	20	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
84:							
Centralpeak	35	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.46	Very limited Slope	1.00
Centralpeak	30	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.46	Very limited Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
85:							
Chumstick	60	Very limited Depth to hard bedrock Slope Content of large stones	1.00 0.84 0.01	Very limited Depth to hard bedrock Slope Content of large stones	1.00 0.84 0.01	Very limited Depth to hard bedrock Slope Content of large stones	1.00 1.00 0.01
Rock outcrop	25	Not rated		Not rated		Not rated	
86:							
Chumstick	50	Very limited Slope Depth to hard bedrock Content of large stones	1.00 1.00 0.01	Very limited Slope Depth to hard bedrock Content of large stones	1.00 1.00 0.01	Very limited Slope Depth to hard bedrock Content of large stones	1.00 1.00 0.01
Rock outcrop	35	Not rated		Not rated		Not rated	
87:							
Codylake	90	Somewhat limited Slope	0.84	Somewhat limited Slope	0.84	Very limited Slope	1.00
88:							
Codylake	80	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
89:							
Codylake	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
90:							
Colockum	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91:							
Colockum	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
				Shrink-swell	0.50		
92:							
Colockum	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Shrink-swell	0.50		
93:							
Conconully	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
94:							
Conconully	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
95:							
Conconully	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
96:							
Conconully	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
97:							
Conconully	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
98:							
Conconully	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
99:							
Conconully	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
Bakeoven	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	0.96	Slope	0.96	Slope	1.00
100:							
Conconully	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
101:							
Conconully	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
102:							
Conconully	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
102:							
Swakane	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08
Rock outcrop	15	Not rated		Not rated		Not rated	
103:							
Couleedam	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08
Rock outcrop	30	Not rated		Not rated		Not rated	
104:							
Coxlake	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
105:							
Cryofluvents	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	1.00	Depth to saturated zone	0.86
106:							
Cubcreek	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.27	Depth to saturated zone	1.00	Depth to saturated zone	0.27
107:							
Cumulic Haploxerolls	85	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	1.00	Slope	0.86
108:							
Dart	85	Not limited		Not limited		Very limited	
						Slope	1.00
109:							
Dart	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
110:							
Dart	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Springdale	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
111:							
Dart	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Springdale	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
112:							
Dehart	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
113:							
Dehart	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
114:							
Dehart	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Phoebe	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
115:							
Dehart	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
116:							
Dehart	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
117:							
Dinkelman	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
118:							
Dinkelman	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
119:							
Dinkelman	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
120:							
Disautel	85	Not limited		Not limited		Not limited	
121:							
Disautel	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
122:							
Disautel	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Nespelem	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Depth to thin cemented pan	0.46		

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
123:							
Disautel	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
124:							
Donavan	85	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
125:							
Donavan	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
126:							
Donavan	85	Somewhat limited Slope	0.84	Somewhat limited Slope	0.84	Very limited Slope	1.00
127:							
Donavan	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
128:							
Donavan	85	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
129:							
Donavan	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
130:							
Donavan	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
131:							
Donavan	90	Somewhat limited Slope	0.84	Somewhat limited Slope	0.84	Very limited Slope	1.00
132:							
Donavan	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
133:							
Donavan	55	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
Goldlake	30	Not limited		Somewhat limited Depth to saturated zone	0.94	Not limited	
134:							
Donavan	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134:							
Northstar	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
135:							
Donavan	65	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
136:							
Donavan	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
137:							
Donavan	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
138:							
Donavan	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
139:							
Duleylake	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.62	Depth to saturated zone	1.00	Depth to saturated zone	0.62
140:							
Elbowlake	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
141:							
Elbowlake	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
142:							
Elbowlake	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
143:							
Elbowlake	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
144:							
Elbowlake	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
145:							
Elbowlake	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
146:							
Ellisforde	85	Not limited		Not limited		Not limited	
147:							
Ellisforde	80	Not limited		Not limited		Very limited	
						Slope	1.00
148:							
Ellisforde	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
149:							
Elvedere	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
150:							
Elvedere	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
151:							
Elvedere	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
152:							
Elvedere	60	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
						Shrink-swell	0.50
Leahy	30	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to	1.00	Slope	1.00
		Depth to saturated zone	0.04	saturated zone		Shrink-swell	0.50
				Shrink-swell	0.50	Depth to saturated zone	0.04
153:							
Emdent	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
154:							
Emdent	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
155:							
Ewall	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12
156:							
Ewall	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
157:							
Ewall	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12
158:							
Ewall	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
159:							
Ewall	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
160:							
Farrell	85	Not limited		Not limited		Not limited	
161:							
Farrell	90	Not limited		Not limited		Very limited	
						Slope	1.00
162:							
Farrell	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
163:							
Farrell	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
164:							
Fivelakes	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
165:							
Fivelakes	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	1.00		
166:							
Fivelakes	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
167:							
Fivelakes	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
168:							
Fivelakes	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
169:							
Friedlander	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
170:							
Friedlander	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
171:							
Friedlander	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
172:							
Garrison	85	Not limited		Not limited		Not limited	
173:							
Garrison	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
174:							
Garrison	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
175:							
Georgecreek	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
176:							
Georgecreek	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
177:							
Georgecreek	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
178:							
Georgecreek	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
179:							
Ginnis	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
180:							
Ginnis	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.35		
181:							
Ginnis	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
182:							
Ginnis	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.35		

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
182:							
Ginnis	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
183:							
Ginnis	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Ginnis	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
184:							
Ginnis	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.35		
Conconully	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
185:							
Ginnis	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.35		
Conconully	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
186:							
Ginnis	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
Rock outcrop	10	Not rated		Not rated		Not rated	
187:							
Glenrose	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
188:							
Glenrose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
189:							
Goddard	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
190:							
Goddard	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
191:							
Goddard	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
192:							
Goldlake	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.94		
193:							
Gooseflats	55	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Gooseflats	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
194:							
Growden	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.80	Content of large stones	0.80	Content of large stones	0.80
195:							
Hadencreek	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
196:							
Haley	85	Not limited		Not limited		Not limited	
197:							
Haley	85	Not limited		Not limited		Very limited	
						Slope	1.00
198:							
Haley	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
199:							
Hallcreek	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Content of large stones	0.02	Content of large stones	0.02	Slope	0.12
						Content of large stones	0.02
200:							
Haploxerolls	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
201:							
Hartill	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.02	Depth to hard bedrock	1.00	Content of large stones	0.02
		Depth to hard bedrock	0.01	Content of large stones	0.02	Depth to hard bedrock	0.01

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
202:							
Hartill	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.02	Depth to hard bedrock	1.00	Content of large stones	0.02
		Depth to hard bedrock	0.01	Content of large stones	0.02	Depth to hard bedrock	0.01
203:							
Hellgate	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
204:							
Hellgate	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
205:							
Henneway	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Shrink-swell	0.50	Slope	1.00
				Slope	0.16		
206:							
Henneway	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Shrink-swell	0.50		
207:							
Henneway	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to hard bedrock	0.01		
208:							
Heytou	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Stubblefield	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to thin cemented pan	0.79		
209:							
Histosols	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
210:							
Hobohill	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
211:							
Hobohill	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
212:							
Hodgson	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
213:							
Hodgson	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
214:							
Hodgson	80	Very limited		Very limited		Very limited	
		Slope	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
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
215:							
Hodgson	80	Very limited		Very limited		Very limited	
		Slope	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
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
216:							
Hudnut	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
217:							
Hudnut	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
218:							
Hunters	85	Not limited		Not limited		Not limited	
219:							
Hunters	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
220:							
Inchelium	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	1.00	Depth to saturated zone	0.08
221:							
Inchelium	90	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.08	Depth to saturated zone	1.00	Slope	1.00
						Depth to saturated zone	0.08
222:							
Inkler	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
223:							
Inkler	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
224:							
Inkler	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
225:							
Inkler	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Baldknob	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Rock outcrop	20	Not rated		Not rated		Not rated	
226:							
Inkler	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Baldknob	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Rock outcrop	20	Not rated		Not rated		Not rated	
227:							
Inkler	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
228:							
Inkler	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
229:							
Jimcreek	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
230:							
Johntom	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
Rubble land	10	Not rated		Not rated		Not rated	
231:							
Karamin	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
232:							
Karamin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
233:							
Karamin	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
234:							
Kartar	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
235:							
Kellerbutte	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
236:							
Kellerbutte	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
237:							
Kenotrail	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.29		
238:							
Kewach	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
239:							
Kewach	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
240:							
Kewach	85	Very limited		Very limited		Very limited	
		Slope	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
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
241:							
Kewach	85	Very limited		Very limited		Very limited	
		Slope	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
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
242:							
Kiehl	80	Not limited		Not limited		Not limited	
243:							
Kiehl	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
244:							
Kiehl	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
245:							
Kiehl	80	Not limited		Not limited		Not limited	
246:							
Kiehl	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
247:							
Kiehl	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
248:							
Koepke	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
249:							
Lakesol	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
250:							
Lithic Xerorthents	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Baldknob	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	
251:							
Lithic Xerorthents	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Baldknob	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
252:							
Logy	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
253:							
Loony	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.04	Depth to saturated zone	1.00	Slope	1.00
						Depth to saturated zone	0.04
254:							
Lostcreek	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to saturated zone	0.82	Slope	1.00
				Slope	0.04		
255:							
Louiecreek	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
256:							
Louploup	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
257:							
Louploup	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
258:							
Lynxcreek	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
				Shrink-swell	0.50		
259:							
Malott	85	Not limited		Not limited		Not limited	
260:							
Malott	85	Not limited		Not limited		Very limited	
						Slope	1.00
261:							
Malott	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
262:							
Malott	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
263:							
Malott	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
264:							
Malott	60	Somewhat limited Slope	 0.96	Somewhat limited Slope	 0.96	Very limited Slope	 1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
265:							
Malott	60	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
266:							
Malott	45	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Torriorthents	40	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
267:							
Manley	80	Somewhat limited Slope	 0.84	Somewhat limited Slope	 0.84	Very limited Slope	 1.00
268:							
Manley	80	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
269:							
Manley	80	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
270:							
Manley	55	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Codylake	30	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
271:							
Manley	65	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
272:							
Manley	65	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
273:							
Martella	85	Somewhat limited Depth to saturated zone Shrink-swell	 0.62 0.50	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	 0.62 0.50
274:							
Martella	85	Somewhat limited Depth to saturated zone Shrink-swell	 0.62 0.50	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	 0.62 0.50

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
275:							
Martella	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.62	Slope	1.00	Depth to saturated zone	0.62
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
276:							
Medisaprists	85	Very limited		Very limited		Very limited	
		Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
277:							
Merkel	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
278:							
Merkel	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
279:							
Merkel	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
280:							
Merkel	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
281:							
Merkel	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
282:							
Mineral	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
283:							
Mineral	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
284:							
Mineral	65	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.84	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
285:							
Mineral	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
286:							
Mineral	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
287:							
Mineral	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
288:							
Mitchellpoint	85	Not limited		Not limited		Not limited	
289:							
Monse	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
290:							
Morical	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
291:							
Morical	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		
292:							
Morical	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.20		
293:							
Moscow	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.15		

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
294:							
Moscow	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		
295:							
Moses	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.15		
296:							
Moses	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.15		
297:							
Moses	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.78	Content of large stones	0.78	Content of large stones	0.78
				Depth to soft bedrock	0.46		
298:							
Moses	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.78	Content of large stones	0.78	Content of large stones	0.78
				Depth to soft bedrock	0.46		
299:							
Narcisse	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.97		
300:							
Narcisse	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.97		
301:							
Nespelem	90	Not limited		Somewhat limited		Not limited	
				Depth to thin cemented pan	0.93		
302:							
Nespelem	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to thin cemented pan	0.46		

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
302:							
Nespelem	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to thin cemented pan	0.06		
303:							
Nespelem	55	Not limited		Somewhat limited		Very limited	
				Depth to thin cemented pan	0.93	Slope	1.00
Emdent	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
304:							
Nespelem	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Depth to thin cemented pan	0.93	Slope	1.00
				Slope	0.84		
Typic Xerorthents	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
305:							
Neuske	85	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
306:							
Neuske	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
307:							
Nevine	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Nevine	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
308:							
Nevine	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Nevine	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
309:							
Nevine	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Nevine	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
310:							
Nevine	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
310:							
Nevine	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
311:							
Nevine	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Nevine	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
312:							
Newbell	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
313:							
Newbell	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
314:							
Newbell	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
315:							
Northstar	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to hard bedrock	0.46
316:							
Northstar	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
317:							
Northstar	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Johntom	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
318:							
Northstar	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
318:							
Johntom	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
319:							
Northstar	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Louiecreek	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	
320:							
Northstar	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Louiecreek	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	
321:							
Northstar	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
Rock outcrop	20	Not rated		Not rated		Not rated	
322:							
Ohscow	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
323:							
Ohscow	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
324:							
Ohscow	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
325:							
Ohscow	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
326:							
Okanogan	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
327:							
Omak	90	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 thin cemented pan	0.01		
328:							
Owhi	85	Not limited		Not limited		Not limited	
329:							
Owhi	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
330:							
Owhi	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Haley	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
331:							
Oxerine	80	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.84	Depth to hard bedrock	0.46
332:							
Oxerine	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
333:							
Oxerine	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
334:							
Oxerine	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
335:							
Oxerine	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
335:							
Rock outcrop	20	Not rated		Not rated		Not rated	
336:							
Parmenter	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Content of large stones	0.71	Content of large stones	0.71	Content of large stones	0.71
337:							
Parmenter	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
		Content of large stones	0.71	Content of large stones	0.71	Content of large stones	0.71
338:							
Parmenter	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.71	Content of large stones	0.71	Content of large stones	0.71
339:							
Parmenter	85	Somewhat limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Slope	1.00
		Slope	0.96	Slope	0.96	Content of large stones	1.00
340:							
Peshastin	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Content of large stones	0.01	Content of large stones	0.01	Slope	0.12
						Content of large stones	0.01
341:							
Peshastin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
342:							
Peshastin	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.33	Content of large stones	0.33	Content of large stones	0.33
343:							
Phoebe	85	Not limited		Not limited		Not limited	
344:							
Phoebe	85	Not limited		Not limited		Very limited	
						Slope	1.00
345:							
Phoebe	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
346:							
Phoebe	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
347:							
Phoebe	85	Not limited		Not limited		Not limited	
348:							
Phoebe	85	Not limited		Not limited		Very limited	
						Slope	1.00
349:							
Phoebe	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
350:							
Phoebe	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Dehart	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
351:							
Picard	85	Not limited		Not limited		Not limited	
352:							
Picard	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
353:							
Pits	100	Not rated		Not rated		Not rated	
354:							
Pogue	85	Not limited		Not limited		Not limited	
355:							
Pogue	85	Not limited		Not limited		Very limited	
						Slope	1.00
356:							
Pogue	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
357:							
Pogue	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
358:							
Pogue	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
359:							
Pogue	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
360:							
Poween	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.76		
361:							
Quincy	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
362:							
Quincy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
363:							
Quincy	85	Not limited		Not limited		Somewhat limited	
						Slope	0.47
364:							
Quincy	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
365:							
Quincy	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
366:							
Quincy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
367:							
Quincy	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Aeneas	35	Not limited		Not limited		Somewhat limited	
						Slope	0.47
368:							
Raisio	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.46	Content of large stones	1.00	Depth to hard bedrock	0.46
369:							
Raisio	60	Somewhat limited		Very limited		Very limited	
		Content of large stones	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.84	Content of large stones	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.46	Slope	0.84	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
370:							
Raisio	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Content of large stones	0.53	Slope	1.00	Content of large stones	0.53
		Depth to hard bedrock	0.46	Content of large stones	0.53	Depth to hard bedrock	0.46
Rufus	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
371:							
Raisio	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.53	Depth to hard bedrock	1.00	Content of large stones	0.53
		Depth to hard bedrock	0.46	Content of large stones	0.53	Depth to hard bedrock	0.46
Rufus	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
372:							
Raisio	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.46	Content of large stones	1.00	Depth to hard bedrock	0.46
Rufus	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.03	Content of large stones	0.03	Content of large stones	0.03
373:							
Raisio	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.46	Content of large stones	1.00	Depth to hard bedrock	0.46
Rufus	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.29	Content of large stones	0.29	Content of large stones	0.29
Rock outcrop	15	Not rated		Not rated		Not rated	
374:							
Raisio	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.17	Content of large stones	0.17	Content of large stones	0.17
Rufus	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
375:							
Raisio	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.17	Content of large stones	0.17	Content of large stones	0.17
Rufus	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
376:							
Ralsen	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
377:							
Ratlake	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to thin cemented pan	1.00	Depth to thin cemented pan	1.00	Depth to thin cemented pan	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
378:							
Reardan	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
379:							
Reardan	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
380:							
Rebecca	90	Not limited		Not limited		Not limited	
381:							
Rebecca	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
382:							
Renha	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.84	Depth to hard bedrock	0.46
383:							
Renha	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
384:							
Renha	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Oxerine	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
385:							
Republic	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
386:							
Republic	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
387:							
Republic	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
388:							
Resner	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
389:							
Resner	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
390:							
Ret	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
391:							
Riverwash	100	Not rated		Not rated		Not rated	
392:							
Rock outcrop	100	Not rated		Not rated		Not rated	
393:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Chumstick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.28	Content of large stones	0.28	Content of large stones	0.28
394:							
Rock outcrop	55	Not rated		Not rated		Not rated	

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
394:							
Chumstick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.28	Content of large stones	0.28	Content of large stones	0.28
395:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Mineral	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
396:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Rufus	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.29	Content of large stones	0.29	Content of large stones	0.29
397:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Soaplake	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
398:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Swakane	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08
399:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Vanbrunt	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.17	Content of large stones	0.17	Content of large stones	0.17
400:							
Roosevelt	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Depth to hard bedrock	0.46

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
400:							
Soaplake	25	Very limited Depth to hard bedrock Slope	 1.00 1.00	Very limited Depth to hard bedrock Slope	 1.00 1.00	Very limited Depth to hard bedrock Slope	 1.00 1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
401:							
Roosevelt	40	Very limited Slope Depth to hard bedrock	 1.00 0.46	Very limited Slope Depth to hard bedrock	 1.00 1.00	Very limited Slope Depth to hard bedrock	 1.00 0.46
Soaplake	30	Very limited Slope Depth to hard bedrock	 1.00 1.00	Very limited Slope Depth to hard bedrock	 1.00 1.00	Very limited Slope Depth to hard bedrock	 1.00 1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
402:							
Rubble land	100	Not rated		Not rated		Not rated	
403:							
Rubble land	60	Not rated		Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated		Not rated	
404:							
Rubble land	40	Not rated		Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated		Not rated	
Haploxerolls	20	Very limited Slope Content of large stones Depth to hard bedrock	 1.00 1.00 1.00	Very limited Slope Depth to hard bedrock Content of large stones	 1.00 1.00 1.00	Very limited Slope Content of large stones Depth to hard bedrock	 1.00 1.00 1.00
405:							
Sacheen	85	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
406:							
Sacheen	85	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
407:							
Sacheen	85	Somewhat limited Slope	 0.16	Somewhat limited Slope	 0.16	Very limited Slope	 1.00
408:							
Sanpoil	80	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
409:							
Sanpoil	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
410:							
Scala	85	Not limited		Not limited		Not limited	
411:							
Sclome	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
412:							
Scoap	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Content of large stones	0.04	Content of large stones	0.04	Content of large stones	0.04
413:							
Scoap	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
414:							
Scoap	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
415:							
Scoap	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
416:							
Scoap	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
417:							
Scrabblers	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
418:							
Scrabblers	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
419:							
Scrabblers	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
420:							
Scrabblers	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
421:							
Sitdown	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
422:							
Skaha	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
423:							
Skaha	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
424:							
Skaha	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
425:							
Skaha	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.14	Content of large stones	0.14	Content of large stones	0.14
426:							
Skaha	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.14	Content of large stones	0.14	Content of large stones	0.14
427:							
Skaha	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.14	Content of large stones	0.14	Content of large stones	0.14
Rock outcrop	20	Not rated		Not rated		Not rated	
428:							
Skanid	85	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	0.84	Slope	0.84	Depth to soft bedrock	1.00
429:							
Skanid	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
430:							
Skanid	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
431:							
Skanid	85	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	0.84	Slope	0.84	Depth to soft bedrock	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
432:							
Skanid	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
433:							
Skanid	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
434:							
Skanid	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
435:							
Skanid	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
436:							
Skanid	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
437:							
Spens	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.03	Content of large stones	0.03	Content of large stones	0.03
438:							
Spens	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.03	Content of large stones	0.03	Content of large stones	0.03
439:							
Spokane	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.46		
440:							
Spokane	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.46		

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
441:							
Spokane	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.46	Very limited Slope	1.00
442:							
Spokane	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.20	Very limited Slope	1.00
443:							
Spokane	85	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.20	Very limited Slope	1.00
444:							
Spokane	65	Somewhat limited Slope	0.84	Somewhat limited Slope Depth to soft bedrock	0.84 0.46	Very limited Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
445:							
Spokane	65	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.46	Very limited Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
446:							
Spokane	60	Somewhat limited Slope	0.84	Somewhat limited Slope Depth to soft bedrock	0.84 0.20	Very limited Slope	1.00
Skanid	25	Somewhat limited Depth to soft bedrock Slope	1.00 0.84	Very limited Depth to soft bedrock Slope	1.00 0.84	Very limited Slope Depth to soft bedrock	1.00 1.00
447:							
Spokane	60	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock	1.00 0.20	Very limited Slope	1.00
Skanid	25	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00	Very limited Slope Depth to soft bedrock	1.00 1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
448:							
Spokane	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.20		
Skanid	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
449:							
Springdale	80	Not limited		Not limited		Very limited	
						Slope	1.00
450:							
Springdale	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
451:							
Springdale	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
452:							
Stapaloop	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
453:							
Stapaloop	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
454:							
Stapaloop	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
455:							
Stepstone	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
456:							
Stepstone	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
457:							
Stepstone	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
458:							
Stepstone	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
459:							
Stevens	85	Not limited		Not limited		Not limited	
460:							
Stevens	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
461:							
Stevens	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
462:							
Stevens	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
463:							
Strat	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
464:							
Stubblefield	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
				Depth to thin cemented pan	0.79		
465:							
Swakane	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
466:							
Swakane	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08
Rock outcrop	30	Not rated		Not rated		Not rated	
467:							
Swakane	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08
Rock outcrop	35	Not rated		Not rated		Not rated	
468:							
Swipkin	85	Not limited		Not limited		Not limited	
469:							
Swipkin	80	Not limited		Not limited		Very limited	
						Slope	1.00
470:							
Thout	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
471:							
Thout	60	Somewhat limited		Very limited		Very limited	
		Slope	0.96	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.96	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
472:							
Thout	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
473:							
Thout	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
Rock outcrop	20	Not rated		Not rated		Not rated	
474:							
Timentwa	85	Not limited		Not limited		Not limited	
475:							
Timentwa	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
476:							
Timentwa	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
477:							
Timentwa	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Timentwa	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
478:							
Timentwa	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Timentwa	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
479:							
Timentwa	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Bakeoven	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
479:							
Rock outcrop	15	Not rated		Not rated		Not rated	
480:							
Togo	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
481:							
Togo	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
482:							
Togo	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
483:							
Togo	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
484:							
Togo	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.27	Content of large stones	0.27	Content of large stones	0.27
Rock outcrop	15	Not rated		Not rated		Not rated	
485:							
Torboy	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
486:							
Torboy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
487:							
Torrifluventic Haploxerolls	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
488:							
Tunkcreek	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
489:							
Tunkcreek	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
490:							
Tyee	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Depth to soft bedrock	1.00
491:							
Tyee	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
492:							
Tyee	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
493:							
Tyee	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Morical	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.20		
Tyee	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
494:							
Tyee	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
495:							
Tyee	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
496:							
Typic Haplaquolls	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
497:							
Typic Xerorthents	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Typic Xerochrepts	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
498:							
Ultic Haploxerolls	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
499:							
Uncas	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
500:							
Vanbrunt	70	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.84	Depth to hard bedrock	0.46
		Content of large stones	0.17	Content of large stones	0.17	Content of large stones	0.17
Rock outcrop	15	Not rated		Not rated		Not rated	
501:							
Vanbrunt	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.17	Content of large stones	0.17	Content of large stones	0.17
Rock outcrop	15	Not rated		Not rated		Not rated	
502:							
Vanbrunt	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
		Content of large stones	0.17	Content of large stones	0.17	Content of large stones	0.17
Rock outcrop	30	Not rated		Not rated		Not rated	
503:							
Wannacott	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
504:							
Wannacott	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
505:							
Wapal	85	Not limited		Not limited		Very limited	
						Slope	1.00
506:							
Wapal	85	Somewhat limited		Somewhat limited		Very limited	
		Content of large stones	0.60	Content of large stones	0.60	Slope	1.00
						Content of large stones	0.60
507:							
Wapal	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
508:							
Wapal	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
509:							
Wellscreek	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
510:							
Wellscreek	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
511:							
Wellscreek	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
512:							
Whitestone	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
513:							
Whitestone	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
514:							
Whitestone	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
515:							
Whitestone	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08
516:							
Whitestone	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
517:							
Wilmont	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
518:							
Wilmont	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
519:							
Wilmont	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
520:							
Wilmont	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
521:							
Winchester	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12

Table 13.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
522:							
Winchester	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
523:							
Winchester	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
524:							
Winchester	70	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
525:							
Winthrop	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
526:							
Wynhoff	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Slope	1.00	Depth to hard bedrock	0.15
527:							
Wynhoff	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
528:							
Xeric Torriorthents	90	Not limited		Not limited		Very limited	
						Slope	1.00
529:							
Xeric Torriorthents	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Content of large stones	0.01
530:							
Xerochrepts	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Rubble land	25	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
531:							
Water	100	Not rated		Not rated		Not rated	
532:							
Dam	100	Not rated		Not rated		Not rated	

Table 14.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Achimin	90	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.33
				Seepage	0.32
2:					
Achimin	60	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	0.32
Calcic Pachic Haploxerolls	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
3:					
Aeneas	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.09
4:					
Aeneas	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
5:					
Ahtanum	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.01
6:					
Aits	80	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
7:					
Aits	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
8:					
Aits	85	Somewhat limited		Very limited	
		Restricted permeability	0.50	Seepage	1.00
				Slope	0.33
9:					
Anders	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	0.50
				Slope	0.33
10:					
Andic Cryaquepts	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
				Slope	0.01
11:					
Annum	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.63	Seepage	0.50
		Restricted permeability	0.50	Depth to soft bedrock	0.18
12:					
Annum	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.59	Seepage	0.50
		Restricted permeability	0.50	Depth to soft bedrock	0.13
13:					
Annum	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.59	Seepage	0.50
		Restricted permeability	0.50	Depth to soft bedrock	0.13
Annum	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.63	Seepage	0.50
		Restricted permeability	0.50	Depth to soft bedrock	0.18
14:					
Apex	80	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
15:					
Apex	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
16:					
Apex	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
17:					
Apex	85	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
18:					
Apex	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
19:					
Apex	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
20:					
Aquic Xerofluvents	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
				Slope	0.01
21:					
Aquic Xerofluvents	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
				Slope	0.01
22:					
Aquic Xerofluvents	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
				Slope	0.01
23:					
Badge	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Content of large stones	1.00
		Content of large stones	0.67	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
24:					
Badge	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Content of large stones	1.00
		Content of large stones	0.67	Seepage	0.50
Rubble land	20	Not rated		Not rated	
25:					
Badland	100	Not rated		Not rated	
26:					
Bakeoven	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Slope	1.00
		Slope	0.96	Content of large stones	1.00
27:					
Bakeoven	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Slope	1.00
		Slope	1.00	Content of large stones	1.00
Olical	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.73	Seepage	0.50
		Restricted permeability	0.50	Depth to hard bedrock	0.32
28:					
Bakeoven	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Slope	1.00
		Slope	1.00	Content of large stones	1.00
Timentwa	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to cemented pan	0.47	Depth to cemented pan	0.05
Rock outcrop	15	Not rated		Not rated	
29:					
Baldknob	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.84	Slope	1.00
		Content of large stones	0.01	Seepage	0.50
				Content of large stones	0.02

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
29:					
Thout	25	Very limited Depth to bedrock Slope Restricted permeability	1.00 0.84 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Rock outcrop	20	Not rated		Not rated	
30:					
Baldknob	40	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.01	Very limited Depth to hard bedrock Slope Seepage Content of large stones	1.00 1.00 0.50 0.02
Thout	25	Very limited Slope Depth to bedrock Restricted permeability	1.00 1.00 0.50	Very limited Slope Depth to hard bedrock Seepage	1.00 1.00 0.50
Rock outcrop	20	Not rated		Not rated	
31:					
Barnellcreek	85	Very limited Depth to saturated zone Restricted permeability Slope	1.00 0.50 0.16	Very limited Depth to saturated zone Slope Seepage	1.00 1.00 0.50
32:					
Bearspring	85	Very limited Slope Restricted permeability	1.00 0.50	Very limited Slope Seepage	1.00 1.00
33:					
Bearspring	85	Very limited Slope	1.00	Very limited Slope Seepage Content of large stones	1.00 1.00 0.01
34:					
Bernhill	85	Somewhat limited Restricted permeability	0.50	Somewhat limited Seepage Slope	0.50 0.09
35:					
Bernhill	80	Somewhat limited Slope Restricted permeability	0.84 0.50	Very limited Slope Seepage	1.00 0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
36:					
Beverly	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.96	Slope	1.00
37:					
Bisbee	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
38:					
Bisbee	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
39:					
Boesel	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Slope	0.01
40:					
Bong	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
41:					
Bong	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
42:					
Bong	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.33
43:					
Borgeau	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
44:					
Borgeau	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
45:					
Borgeau	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
45:					
Rock outcrop	25	Not rated		Not rated	
46:					
Borosaprists	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Subsidence	1.00	Content of organic matter	1.00
		Restricted permeability	0.50		
47:					
Bossburg	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Content of organic matter	1.00
				Seepage	0.50
48:					
Broadax	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
49:					
Broadax	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
50:					
Brusher	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50		
51:					
Brusher	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50		
52:					
Brusher	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50	Slope	1.00
		Slope	0.16		

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53:					
Brusher	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50		
54:					
Buhrig	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
				Content of large stones	1.00
55:					
Buhrig	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
				Content of large stones	1.00
56:					
Buhrig	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
		Content of large stones	0.03		
57:					
Buhrig	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
				Content of large stones	1.00
Rock outcrop	20	Not rated		Not rated	
58:					
Buhrig	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
				Content of large stones	1.00
Rock outcrop	20	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
59:					
Canteen	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to bedrock	0.78	Depth to soft bedrock	0.42
60:					
Canteen	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to bedrock	0.78	Depth to soft bedrock	0.42
61:					
Canteen	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to bedrock	0.78	Depth to soft bedrock	0.42
62:					
Canteen	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Depth to bedrock	0.78	Depth to soft bedrock	0.42
63:					
Capoose	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
64:					
Capoose	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
65:					
Capoose	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
Rock outcrop	15	Not rated		Not rated	
66:					
Capoose	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
Rock outcrop	20	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
67:					
Cashmere	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.09
68:					
Cashmere	85	Not limited		Very limited	
				Seepage	1.00
				Slope	1.00
69:					
Cashmere	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
70:					
Cashmere	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
71:					
Cashmont	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Slope	0.04		
72:					
Cashmont	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
73:					
Cedonia	80	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.09
74:					
Cedonia	80	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.50
		Slope	0.16		
75:					
Cedonia	75	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50
76:					
Cedonia	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50
77:					
Centralpeak	45	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
77:					
Centralpeak	40	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
78:					
Centralpeak	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
Centralpeak	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
79:					
Centralpeak	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
Centralpeak	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
80:					
Centralpeak	85	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
81:					
Centralpeak	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
82:					
Centralpeak	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
83:					
Centralpeak	65	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
83:					
Brusher	20	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50		
84:					
Centralpeak	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
Centralpeak	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated	
85:					
Chumstick	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.84	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.11
Rock outcrop	25	Not rated		Not rated	
86:					
Chumstick	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.11
Rock outcrop	35	Not rated		Not rated	
87:					
Codylake	90	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
		Depth to bedrock	0.78	Slope	1.00
				Depth to soft bedrock	0.42
88:					
Codylake	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.78	Seepage	1.00
				Depth to soft bedrock	0.42

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
89:					
Codylake	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.78	Seepage	1.00
				Depth to soft bedrock	0.42
90:					
Colockum	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
91:					
Colockum	85	Somewhat limited		Very limited	
		Slope	0.96	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
92:					
Colockum	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
93:					
Conconully	90	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
94:					
Conconully	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
95:					
Conconully	85	Somewhat limited		Very limited	
		Slope	0.96	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
96:					
Conconully	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
97:					
Conconully	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
98:					
Conconully	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
99:					
Conconully	50	Somewhat limited		Very limited	
		Slope	0.96	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
Bakeoven	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Slope	1.00
		Slope	0.96	Content of large stones	1.00
100:					
Conconully	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
101:					
Conconully	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
102:					
Conconully	40	Somewhat limited		Very limited	
		Slope	0.96	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
Swakane	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.08	Slope	1.00
				Content of large stones	0.19
Rock outcrop	15	Not rated		Not rated	
103:					
Couleedam	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.08	Seepage	1.00
				Content of large stones	0.13
Rock outcrop	30	Not rated		Not rated	
104:					
Coxlake	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	1.00
				Slope	0.01

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
105:					
Cryofluvents	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.33
106:					
Cubcreek	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
				Slope	0.01
107:					
Cumulic Haploxerolls	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Slope	1.00
108:					
Dart	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
109:					
Dart	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
110:					
Dart	50	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
Springdale	35	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
111:					
Dart	45	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Springdale	40	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
112:					
Dehart	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
113:					
Dehart	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
114:					
Dehart	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
Phoebe	25	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
115:					
Dehart	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
Rock outcrop	25	Not rated		Not rated	
116:					
Dehart	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
Rock outcrop	30	Not rated		Not rated	
117:					
Dinkelman	85	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
		Depth to bedrock	0.78	Slope	1.00
		Restricted permeability	0.50	Depth to soft bedrock	0.42
118:					
Dinkelman	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.78	Seepage	1.00
		Restricted permeability	0.50	Depth to soft bedrock	0.42
119:					
Dinkelman	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.78	Seepage	1.00
				Depth to soft bedrock	0.42

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
120:					
Disautel	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
121:					
Disautel	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
122:					
Disautel	60	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
Nespelem	30	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.63	Slope	1.00
				Seepage	0.50
123:					
Disautel	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
Rock outcrop	30	Not rated		Not rated	
124:					
Donavan	85	Somewhat limited		Very limited	
		Slope	0.16	Seepage	1.00
				Slope	1.00
125:					
Donavan	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
126:					
Donavan	85	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
127:					
Donavan	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
128:					
Donavan	85	Somewhat limited		Very limited	
		Slope	0.16	Seepage	1.00
				Slope	1.00
129:					
Donavan	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
130:					
Donavan	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
131:					
Donavan	90	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
132:					
Donavan	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
133:					
Donavan	55	Somewhat limited		Very limited	
		Slope	0.16	Seepage	1.00
				Slope	1.00
Goldlake	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
134:					
Donavan	50	Very limited		Very limited	
		Slope	1.00	Seepage	1.00
				Slope	1.00
Northstar	30	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.01	Slope	1.00
				Content of large stones	0.61
135:					
Donavan	65	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
Rock outcrop	20	Not rated		Not rated	
136:					
Donavan	60	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
Rock outcrop	20	Not rated		Not rated	
137:					
Donavan	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
138:					
Donavan	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
139:					
Duleylake	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
140:					
Elbowlake	80	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
				Seepage	0.50
141:					
Elbowlake	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
142:					
Elbowlake	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
143:					
Elbowlake	85	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
				Seepage	0.50
144:					
Elbowlake	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
145:					
Elbowlake	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
146:					
Ellisforde	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.09
147:					
Ellisforde	80	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.50
148:					
Ellisforde	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.50
		Slope	1.00		

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
149:					
Elvedere	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00		
150:					
Elvedere	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.96		
151:					
Elvedere	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00		
152:					
Elvedere	60	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
Leahy	30	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
153:					
Emdent	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.01
154:					
Emdent	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
		Flooding	0.40	Flooding	0.40
155:					
Ewall	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
156:					
Ewall	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
157:					
Ewall	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
158:					
Ewall	90	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
159:					
Ewall	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
160:					
Farrell	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.09
161:					
Farrell	90	Not limited		Very limited	
				Seepage	1.00
				Slope	1.00
162:					
Farrell	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
163:					
Farrell	85	Somewhat limited		Very limited	
		Slope	0.16	Seepage	1.00
				Slope	1.00
164:					
Fivelakes	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Content of large stones	1.00
		Content of large stones	1.00	Seepage	1.00
165:					
Fivelakes	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Flooding	0.40
				Slope	0.09
166:					
Fivelakes	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Slope	0.84	Content of large stones	0.03

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
167:					
Fivelakes	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
				Content of large stones	0.03
168:					
Fivelakes	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Content of large stones	1.00
		Content of large stones	1.00	Slope	1.00
169:					
Friedlander	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16	Seepage	0.50
170:					
Friedlander	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50
171:					
Friedlander	90	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16	Seepage	0.50
172:					
Garrison	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50	Slope	0.09
173:					
Garrison	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50	Slope	1.00
		Slope	0.16		
174:					
Garrison	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Restricted permeability	0.50		

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
175:					
Georgecreek	85	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to bedrock	0.36	Depth to soft bedrock	0.01
176:					
Georgecreek	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to bedrock	0.36	Depth to soft bedrock	0.01
177:					
Georgecreek	85	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Depth to bedrock	0.52	Seepage	0.50
		Restricted permeability	0.50	Depth to soft bedrock	0.08
178:					
Georgecreek	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.52	Seepage	0.50
		Restricted permeability	0.50	Depth to soft bedrock	0.08
179:					
Ginnis	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
180:					
Ginnis	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
181:					
Ginnis	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	0.50
182:					
Ginnis	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Ginnis	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
183:					
Ginnis	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Ginnis	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
184:					
Ginnis	50	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	1.00	Depth to soft bedrock	1.00
				Slope	1.00
Conconully	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
185:					
Ginnis	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Conconully	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	0.50
186:					
Ginnis	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Rock outcrop	10	Not rated		Not rated	
187:					
Glenrose	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
188:					
Glenrose	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
189:					
Goddard	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
190:					
Goddard	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
191:					
Goddard	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
192:					
Goldlake	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
193:					
Gooseflats	55	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
		Depth to cemented pan	0.78	Depth to cemented pan	0.42
Gooseflats	30	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
194:					
Growden	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.80	Seepage	1.00
				Content of large stones	0.08
195:					
Hadencreek	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.33

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
196:					
Haley	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.09
		Restricted permeability	0.50		
197:					
Haley	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Restricted permeability	0.50		
198:					
Haley	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
		Restricted permeability	0.50		
199:					
Hallcreek	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
		Content of large stones	0.02		
200:					
Haploxerolls	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
201:					
Hartill	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50		
				Seepage	0.50
		Content of large stones	0.02		
202:					
Hartill	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50		
				Seepage	0.50
		Content of large stones	0.02		
203:					
Hellgate	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Slope	0.63		

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
204:					
Hellgate	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
205:					
Henneway	85	Somewhat limited		Very limited	
		Restricted permeability	0.68	Slope	1.00
		Depth to bedrock	0.30	Seepage	0.50
		Slope	0.16		
206:					
Henneway	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.68	Seepage	0.50
		Depth to bedrock	0.30		
207:					
Henneway	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.68	Seepage	0.50
		Depth to bedrock	0.36	Depth to hard bedrock	0.01
208:					
Heytou	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
				Content of large stones	0.06
Stubblefield	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Restricted permeability	0.50	Seepage	0.50
209:					
Histosols	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Subsidence	1.00	Content of organic matter	1.00
		Restricted permeability	0.50		
210:					
Hobohill	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
211:					
Hobohill	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.96	Slope	1.00
212:					
Hodgson	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	0.09
213:					
Hodgson	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16		
214:					
Hodgson	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00		
215:					
Hodgson	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00		
216:					
Hudnut	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
217:					
Hudnut	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
218:					
Hunters	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.09
219:					
Hunters	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
220:					
Inchelium	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.09
221:					
Inchelium	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.50
222:					
Inkler	85	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
223:					
Inkler	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
224:					
Inkler	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
225:					
Inkler	40	Very limited		Very limited	
		Slope	1.00	Seepage	1.00
				Slope	1.00
Baldknob	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	0.50
				Content of large stones	0.02
Rock outcrop	20	Not rated		Not rated	
226:					
Inkler	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Baldknob	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	0.50
				Content of large stones	0.02
Rock outcrop	20	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
227:					
Inkler	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
228:					
Inkler	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
229:					
Jimcreek	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.09
230:					
Johntom	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
Rubble land	10	Not rated		Not rated	
231:					
Karamin	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
232:					
Karamin	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
233:					
Karamin	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
234:					
Kartar	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
235:					
Kellerbutte	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
236:					
Kellerbutte	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
237:					
Kenotrail	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00		
238:					
Kewach	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	0.03
239:					
Kewach	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16		
240:					
Kewach	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00		
241:					
Kewach	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00		
242:					
Kiehl	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.33
243:					
Kiehl	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
244:					
Kiehl	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
245:					
Kiehl	80	Very limited Filtering capacity	1.00	Very limited Seepage Slope	1.00 0.33
246:					
Kiehl	80	Very limited Slope Filtering capacity	1.00 1.00	Very limited Slope Seepage	1.00 1.00
247:					
Kiehl	80	Very limited Slope Filtering capacity	1.00 1.00	Very limited Slope Seepage	1.00 1.00
248:					
Koepke	85	Very limited Slope Restricted permeability	1.00 0.50	Very limited Slope Seepage	1.00 0.50
249:					
Lakesol	90	Very limited Slope Restricted permeability	1.00 1.00	Very limited Slope Seepage	1.00 0.50
250:					
Lithic Xerorthents	40	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.01	Very limited Depth to hard bedrock Slope	1.00 1.00
Baldknob	30	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.01	Very limited Depth to hard bedrock Slope Seepage Content of large stones	1.00 1.00 0.50 0.02
Rock outcrop	15	Not rated		Not rated	
251:					
Lithic Xerorthents	40	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.01	Very limited Depth to hard bedrock Slope	1.00 1.00
Baldknob	25	Very limited Depth to bedrock Slope Content of large stones	1.00 1.00 0.01	Very limited Depth to hard bedrock Slope Seepage Content of large stones	1.00 1.00 0.50 0.02

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
251:					
Rock outcrop	20	Not rated		Not rated	
252:					
Logy	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.96	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.56
253:					
Loony	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.50	Depth to saturated zone	1.00
				Seepage	0.50
254:					
Lostcreek	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.50	Depth to saturated zone	1.00
		Slope	0.04	Seepage	0.50
255:					
Louiecreek	85	Somewhat limited		Very limited	
		Slope	0.63	Seepage	1.00
		Content of large stones	0.01	Slope	1.00
256:					
Louploup	80	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16	Seepage	0.50
257:					
Louploup	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50
258:					
Lynxcreek	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
259:					
Malott	85	Somewhat limited		Somewhat limited	
		Depth to cemented pan	0.78	Seepage	0.50
		Restricted permeability	0.50	Depth to cemented pan	0.42
				Slope	0.09

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
260:					
Malott	85	Somewhat limited Depth to cemented pan Restricted permeability	 0.78 0.50	Very limited Slope Seepage Depth to cemented pan	 1.00 0.50 0.42
261:					
Malott	85	Very limited Slope Depth to cemented pan Restricted permeability	 1.00 0.78 0.50	Very limited Slope Seepage Depth to cemented pan	 1.00 0.50 0.42
262:					
Malott	80	Somewhat limited Slope Depth to cemented pan Restricted permeability	 0.96 0.63 0.50	Very limited Slope Seepage Depth to cemented pan	 1.00 0.50 0.18
263:					
Malott	80	Very limited Slope Depth to cemented pan Restricted permeability	 1.00 0.63 0.50	Very limited Slope Seepage Depth to cemented pan	 1.00 0.50 0.18
264:					
Malott	60	Somewhat limited Slope Depth to cemented pan Restricted permeability	 0.96 0.63 0.50	Very limited Slope Seepage Depth to cemented pan	 1.00 0.50 0.18
Rock outcrop	20	Not rated		Not rated	
265:					
Malott	60	Very limited Slope Depth to cemented pan Restricted permeability	 1.00 0.63 0.50	Very limited Slope Seepage Depth to cemented pan	 1.00 0.50 0.18
Rock outcrop	20	Not rated		Not rated	
266:					
Malott	45	Very limited Slope Depth to cemented pan Restricted permeability	 1.00 0.63 0.50	Very limited Slope Seepage Depth to cemented pan	 1.00 0.50 0.18

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
266:					
Torriorthents	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
				Content of large stones	0.01
267:					
Manley	80	Very limited		Very limited	
		Restricted permeability	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
268:					
Manley	80	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
269:					
Manley	80	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
270:					
Manley	55	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Codylake	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.78	Seepage	1.00
				Depth to soft bedrock	0.42
271:					
Manley	65	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
272:					
Manley	65	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
273:					
Martella	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
274:					
Martella	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
275:					
Martella	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
276:					
Medisaprists	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Content of organic matter	1.00
		Subsidence	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
277:					
Merkel	90	Very limited		Very limited	
		Restricted permeability	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
278:					
Merkel	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
279:					
Merkel	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
280:					
Merkel	85	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
		Content of large stones	0.01	Slope	1.00
				Content of large stones	0.01
281:					
Merkel	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	1.00
				Content of large stones	0.01

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
282:					
Mineral	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
				Content of large stones	0.30
283:					
Mineral	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
				Content of large stones	0.30
284:					
Mineral	65	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	0.84	Depth to hard bedrock	1.00
				Slope	1.00
				Content of large stones	0.30
Rock outcrop	20	Not rated		Not rated	
285:					
Mineral	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
				Content of large stones	0.30
Rock outcrop	20	Not rated		Not rated	
286:					
Mineral	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
				Content of large stones	0.30
Rock outcrop	20	Not rated		Not rated	
287:					
Mineral	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	0.50
				Content of large stones	0.01

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
287:					
Rock outcrop	20	Not rated		Not rated	
288:					
Mitchellpoint	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50	Slope	0.09
289:					
Monse	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.33
290:					
Morical	85	Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	1.00
				Seepage	0.50
291:					
Morical	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	0.50
292:					
Morical	85	Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
293:					
Moscow	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
294:					
Moscow	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
295:					
Moses	80	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	1.00	Depth to soft bedrock	1.00
				Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296:					
Moses	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
297:					
Moses	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.78	Depth to soft bedrock	1.00
				Content of large stones	1.00
298:					
Moses	80	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	1.00	Depth to soft bedrock	1.00
		Content of large stones	0.78	Slope	1.00
				Content of large stones	1.00
299:					
Narcisse	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50	Slope	0.01
300:					
Narcisse	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50	Slope	0.01
301:					
Nespelem	90	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
				Seepage	0.50
				Slope	0.09
302:					
Nespelem	50	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
302:					
Nespelem	40	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
303:					
Nespelem	55	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
				Slope	1.00
				Seepage	0.50
Emdent	30	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.01
304:					
Nespelem	75	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.84	Slope	1.00
				Seepage	0.50
Typic Xerorthents	20	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.84		
305:					
Neuske	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.16	Seepage	0.50
306:					
Neuske	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50
307:					
Nevine	45	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
Nevine	40	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
308:					
Nevine	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
308:					
Nevine	40	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00
309:					
Nevine	45	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00
Nevine	40	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00
310:					
Nevine	30	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00
Nevine	30	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00
Rock outcrop	20	Not rated		Not rated	
311:					
Nevine	30	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00
Nevine	30	Very limited Slope	1.00	Very limited Slope Seepage	1.00 1.00
Rock outcrop	20	Not rated		Not rated	
312:					
Newbell	80	Somewhat limited Slope	0.84	Very limited Slope Seepage	1.00 0.50
313:					
Newbell	85	Very limited Slope	1.00	Very limited Slope Seepage	1.00 0.50
314:					
Newbell	80	Very limited Slope	1.00	Very limited Slope Seepage	1.00 0.50
315:					
Northstar	85	Very limited Depth to bedrock Slope Restricted permeability	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
316:					
Northstar	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
317:					
Northstar	50	Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.01	Depth to hard bedrock	1.00
				Content of large stones	0.61
Johntom	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
318:					
Northstar	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.01	Depth to hard bedrock	1.00
				Content of large stones	0.61
Johntom	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
319:					
Northstar	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.01	Depth to hard bedrock	1.00
				Content of large stones	0.61
Louiecreek	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
320:					
Northstar	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.01	Depth to hard bedrock	1.00
				Content of large stones	0.61
Louiecreek	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
321:					
Northstar	65	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.01	Slope	1.00
				Content of large stones	0.61
Rock outcrop	20	Not rated		Not rated	
322:					
Ohscow	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
323:					
Ohscow	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
324:					
Ohscow	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
325:					
Ohscow	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
326:					
Okanogan	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.09
		Restricted permeability	0.50		

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
327:					
Omak	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
328:					
Owhi	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.33
329:					
Owhi	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
330:					
Owhi	45	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
Haley	35	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50		
331:					
Oxerine	80	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	0.84	Depth to hard bedrock	1.00
				Slope	1.00
332:					
Oxerine	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
333:					
Oxerine	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
334:					
Oxerine	65	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	1.00	Depth to hard bedrock	1.00
				Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
334:					
Rock outcrop	20	Not rated		Not rated	
335:					
Oxerine	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
Rock outcrop	20	Not rated		Not rated	
336:					
Parmenter	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.33
		Content of large stones	0.71	Content of large stones	0.22
337:					
Parmenter	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	0.96	Content of large stones	0.22
		Content of large stones	0.71		
338:					
Parmenter	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00	Content of large stones	0.22
		Content of large stones	0.71		
339:					
Parmenter	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Content of large stones	1.00	Content of large stones	0.98
		Slope	0.96		
340:					
Peshastin	85	Somewhat limited		Very limited	
		Content of large stones	0.01	Seepage	1.00
				Slope	0.67
341:					
Peshastin	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	1.00
342:					
Peshastin	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.33	Seepage	1.00
				Content of large stones	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
343:					
Phoebe	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.09
344:					
Phoebe	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
345:					
Phoebe	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
346:					
Phoebe	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
347:					
Phoebe	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.09
348:					
Phoebe	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
349:					
Phoebe	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
350:					
Phoebe	55	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
Dehart	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
351:					
Picard	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.33
		Restricted permeability	0.50		

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
352:					
Picard	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Restricted permeability	0.50		
353:					
Pits	100	Not rated		Not rated	
354:					
Pogue	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.09
355:					
Pogue	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
356:					
Pogue	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
357:					
Pogue	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
358:					
Pogue	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
359:					
Pogue	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
360:					
Poween	85	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Restricted permeability	0.50	Seepage	0.50
		Flooding	0.40	Flooding	0.40
				Slope	0.09
361:					
Quincy	90	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
362:					
Quincy	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
363:					
Quincy	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.91
364:					
Quincy	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
365:					
Quincy	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
366:					
Quincy	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
367:					
Quincy	55	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
Aeneas	35	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.91
368:					
Raisio	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
				Content of large stones	1.00
369:					
Raisio	60	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
		Slope	0.84	Content of large stones	1.00
				Slope	1.00
Rock outcrop	20	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
370:					
Raisio	45	Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.53	Depth to hard bedrock	1.00
				Content of large stones	1.00
Rufus	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	0.50
				Content of large stones	0.01
371:					
Raisio	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.53	Depth to hard bedrock	1.00
				Content of large stones	1.00
Rufus	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	0.50
				Content of large stones	0.01
372:					
Raisio	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
				Content of large stones	1.00
Rufus	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.03	Seepage	0.50
				Content of large stones	0.04
373:					
Raisio	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00
				Content of large stones	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
373:					
Rufus	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.29	Seepage	0.50
				Content of large stones	0.48
Rock outcrop	15	Not rated		Not rated	
374:					
Raisio	45	Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.17	Depth to hard bedrock	1.00
				Content of large stones	0.88
Rufus	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
375:					
Raisio	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.17	Depth to hard bedrock	1.00
				Content of large stones	0.88
Rufus	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
376:					
Ralsen	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.50	Seepage	1.00
				Slope	0.01
377:					
Ratlake	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
378:					
Reardan	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.33
379:					
Reardan	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.50
		Slope	0.63		
380:					
Rebecca	90	Not limited		Very limited	
				Seepage	1.00
				Slope	0.33
381:					
Rebecca	85	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
382:					
Renha	85	Very limited		Very limited	
		Restricted permeability	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.84		
383:					
Renha	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00		
384:					
Renha	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00		
Oxerine	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
385:					
Republic	85	Somewhat limited		Very limited	
		Restricted permeability	0.50	Seepage	1.00
		Slope	0.04	Slope	1.00
386:					
Republic	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
387:					
Republic	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
388:					
Resner	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
389:					
Resner	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
390:					
Ret	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
				Slope	0.01
391:					
Riverwash	100	Not rated		Not rated	
392:					
Rock outcrop	100	Not rated		Not rated	
393:					
Rock outcrop	55	Not rated		Not rated	
Chumstick	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.28	Content of large stones	0.91
394:					
Rock outcrop	55	Not rated		Not rated	
Chumstick	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.28	Content of large stones	0.91
395:					
Rock outcrop	50	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
395:					
Mineral	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
				Content of large stones	0.30
396:					
Rock outcrop	55	Not rated		Not rated	
Rufus	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.29	Seepage	0.50
				Content of large stones	0.48
397:					
Rock outcrop	45	Not rated		Not rated	
Soaplake	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
398:					
Rock outcrop	50	Not rated		Not rated	
Swakane	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.08	Slope	1.00
				Content of large stones	0.19
399:					
Rock outcrop	45	Not rated		Not rated	
Vanbrunt	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.17	Depth to hard bedrock	1.00
				Content of large stones	1.00
400:					
Roosevelt	45	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	1.00	Depth to hard bedrock	1.00
				Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
400:					
Soaplake	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
401:					
Roosevelt	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to hard bedrock	1.00
Soaplake	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
402:					
Rubble land	100	Not rated		Not rated	
403:					
Rubble land	60	Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated	
404:					
Rubble land	40	Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated	
Haploxerolls	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00
		Filtering capacity	1.00	Seepage	1.00
405:					
Sacheen	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
406:					
Sacheen	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
407:					
Sacheen	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
408:					
Sanpoil	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50		
409:					
Sanpoil	80	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50		
410:					
Scala	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.01
411:					
Sclome	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Slope	0.01
412:					
Scoap	80	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Content of large stones	0.04	Content of large stones	0.28
413:					
Scoap	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
414:					
Scoap	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
415:					
Scoap	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
416:					
Scoap	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
417:					
Scrabblers	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
418:					
Scrabblers	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
419:					
Scrabblers	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
420:					
Scrabblers	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
421:					
Sitdown	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
422:					
Skaha	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
423:					
Skaha	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
424:					
Skaha	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
425:					
Skaha	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.14	Content of large stones	0.71
426:					
Skaha	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.14	Content of large stones	0.71
427:					
Skaha	60	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.14	Content of large stones	0.71
Rock outcrop	20	Not rated		Not rated	
428:					
Skanid	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Seepage	1.00
				Slope	1.00
429:					
Skanid	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
430:					
Skanid	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
431:					
Skanid	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Seepage	1.00
				Slope	1.00
432:					
Skanid	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
433:					
Skanid	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
434:					
Skanid	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
435:					
Skanid	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
436:					
Skanid	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
437:					
Spens	90	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.03		
438:					
Spens	90	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.03		
439:					
Spokane	85	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	0.84	Depth to soft bedrock	1.00
				Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
440:					
Spokane	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
441:					
Spokane	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
442:					
Spokane	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
443:					
Spokane	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
444:					
Spokane	65	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	0.84	Depth to soft bedrock	1.00
				Slope	1.00
Rock outcrop	20	Not rated		Not rated	
445:					
Spokane	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated	
446:					
Spokane	60	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	0.84	Depth to soft bedrock	1.00
				Slope	1.00
Skanid	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Seepage	1.00
				Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
447:					
Spokane	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Skanid	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00
448:					
Spokane	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
				Depth to soft bedrock	1.00
Skanid	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00
449:					
Springdale	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
450:					
Springdale	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
451:					
Springdale	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
452:					
Stapaloop	85	Somewhat limited		Very limited	
		Slope	0.16	Seepage	1.00
				Slope	1.00
453:					
Stapaloop	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
454:					
Stapaloop	80	Somewhat limited		Very limited	
		Slope	0.16	Seepage	1.00
				Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
455:					
Stepstone	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
456:					
Stepstone	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
457:					
Stepstone	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
458:					
Stepstone	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Restricted permeability	0.50	Content of large stones	0.01
459:					
Stevens	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.33
460:					
Stevens	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
				Seepage	1.00
461:					
Stevens	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
462:					
Stevens	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
463:					
Strat	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50	Slope	0.67
464:					
Stubblefield	80	Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.96	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
465:					
Swakane	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
466:					
Swakane	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.08	Slope	1.00
				Content of large stones	0.19
Rock outcrop	30	Not rated		Not rated	
467:					
Swakane	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.08	Seepage	1.00
				Content of large stones	0.19
Rock outcrop	35	Not rated		Not rated	
468:					
Swipkin	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.09
469:					
Swipkin	80	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.50
470:					
Thout	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
471:					
Thout	60	Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.96	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
Rock outcrop	20	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
472:					
Thout	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
473:					
Thout	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
474:					
Timentwa	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
		Depth to cemented pan	0.47	Depth to cemented pan	0.05
475:					
Timentwa	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to cemented pan	0.47	Depth to cemented pan	0.05
476:					
Timentwa	85	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to cemented pan	0.47	Depth to cemented pan	0.05
				Content of large stones	0.01
477:					
Timentwa	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to cemented pan	0.47	Depth to cemented pan	0.05
Timentwa	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to cemented pan	0.78	Seepage	0.50
		Restricted permeability	0.50	Depth to cemented pan	0.42

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
478:					
Timentwa	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to cemented pan	0.47	Depth to cemented pan	0.05
Timentwa	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to cemented pan	0.78	Seepage	0.50
		Restricted permeability	0.50	Depth to cemented pan	0.42
479:					
Timentwa	50	Somewhat limited		Very limited	
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
		Depth to cemented pan	0.47	Depth to cemented pan	0.05
Bakeoven	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Slope	1.00
		Slope	1.00	Content of large stones	1.00
Rock outcrop	15	Not rated		Not rated	
480:					
Togo	80	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
481:					
Togo	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
482:					
Togo	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
483:					
Togo	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
484:					
Togo	65	Very limited		Very limited	
		Slope	1.00	Seepage	1.00
		Content of large stones	0.27	Slope	1.00
				Content of large stones	0.81
Rock outcrop	15	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
485:					
Torboy	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
486:					
Torboy	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
487:					
Torrifluventic Haploxerolls	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.01
488:					
Tunkcreek	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
489:					
Tunkcreek	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
490:					
Tyee	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
491:					
Tyee	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
492:					
Tyee	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
493:					
Tyee	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
493:					
Morical	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
Tyee	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
494:					
Tyee	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
495:					
Tyee	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Rock outcrop	20	Not rated		Not rated	
496:					
Typic Haplaquolls	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Seepage	1.00
497:					
Typic Xerorthents	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Typic Xerochrepts	40	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00		
498:					
Ultic Haploxerolls	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
499:					
Uncas	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00	Content of organic matter	1.00
				Seepage	0.50
500:					
Vanbrunt	70	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Slope	0.84	Depth to hard bedrock	1.00
		Content of large stones	0.17	Slope	1.00
				Content of large stones	1.00
Rock outcrop	15	Not rated		Not rated	
501:					
Vanbrunt	70	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.17	Depth to hard bedrock	1.00
				Content of large stones	1.00
Rock outcrop	15	Not rated		Not rated	
502:					
Vanbrunt	55	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Content of large stones	0.17	Depth to hard bedrock	1.00
				Content of large stones	1.00
Rock outcrop	30	Not rated		Not rated	
503:					
Wannacott	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.33
504:					
Wannacott	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.63	Seepage	0.50
505:					
Wapal	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
506:					
Wapal	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Content of large stones	0.60	Content of large stones	1.00
507:					
Wapal	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
508:					
Wapal	85	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
509:					
Wellscreek	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.50
		Slope	0.84		
510:					
Wellscreek	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50
511:					
Wellscreek	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.50
512:					
Whitestone	85	Somewhat limited		Very limited	
		Slope	0.84	Seepage	1.00
				Slope	1.00
513:					
Whitestone	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
514:					
Whitestone	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
515:					
Whitestone	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.08	Seepage	1.00
				Content of large stones	0.82

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
516:					
Whitestone	65	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop	20	Not rated		Not rated	
517:					
Wilmont	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50		
518:					
Wilmont	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	0.50		
519:					
Wilmont	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
520:					
Wilmont	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
521:					
Winchester	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.67
522:					
Winchester	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
523:					
Winchester	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
524:					
Winchester	70	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.84	Slope	1.00
Rock outcrop	20	Not rated		Not rated	

Table 14.--Sanitary Facilities--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
525:					
Winthrop	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
526:					
Wynhoff	80	Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
527:					
Wynhoff	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
528:					
Xeric Torriorthents	90	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
529:					
Xeric Torriorthents	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Content of large stones	0.01	Content of large stones	0.86
530:					
Xerochrepts	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
Rubble land	25	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
531:					
Water	100	Not rated		Not rated	
532:					
Dam	100	Not rated		Not rated	

Table 15.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1:					
Achimin	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
2:					
Achimin	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Calcic Pachic Haploxerolls	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
3:					
Aeneas	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
4:					
Aeneas	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
5:					
Ahtanum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6:					
Aits	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
7:					
Aits	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
8:					
Aits	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
9:					
Anders	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1:					
Achimin	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
2:					
Achimin	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Calcic Pachic Haploxerolls	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
3:					
Aeneas	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
4:					
Aeneas	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
5:					
Ahtanum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6:					
Aits	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
7:					
Aits	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
8:					
Aits	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
9:					
Anders	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
10:					
Andic Cryaquepts	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11:					
Annum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
12:					
Annum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
13:					
Annum	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Annum	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
14:					
Apex	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
15:					
Apex	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
16:					
Apex	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
17:					
Apex	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
18:					
Apex	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
19:					
Apex	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
20:					
Aquic Xerofluvents	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.04

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
21:					
Aquic Xerofluvents	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.06
22:					
Aquic Xerofluvents	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.04
23:					
Badge	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
24:					
Badge	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rubble land	20	Not rated		Not rated	
25:					
Badland	100	Not rated		Not rated	
26:					
Bakeoven	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
27:					
Bakeoven	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Olical	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
28:					
Bakeoven	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Timentwa	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
29:					
Baldknob	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Thout	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
30:					
Baldknob	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Thout	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
31:					
Barnellcreek	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
32:					
Bearspring	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
33:					
Bearspring	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
34:					
Bernhill	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
35:					
Bernhill	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
36:					
Beverly	85	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.03
37:					
Bisbee	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.10
		Thickest layer	0.00	Bottom layer	0.50
38:					
Bisbee	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.10
		Thickest layer	0.00	Bottom layer	0.50
39:					
Boesel	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.01
40:					
Bong	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.10

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
41:					
Bong	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.10
42:					
Bong	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.10
43:					
Borgeau	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
44:					
Borgeau	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
45:					
Borgeau	55	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Rock outcrop	25	Not rated		Not rated	
46:					
Borosaprists	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
47:					
Bossburg	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
48:					
Broadax	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
49:					
Broadax	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
50:					
Brusher	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.07
51:					
Brusher	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.07
52:					
Brusher	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.07

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
53:					
Brusher	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.07
54:					
Buhrig	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
55:					
Buhrig	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
56:					
Buhrig	85	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
57:					
Buhrig	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
58:					
Buhrig	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
59:					
Canteen	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
60:					
Canteen	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
61:					
Canteen	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
62:					
Canteen	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
63:					
Capoose	85	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.06	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
64:					
Capoose	80	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.06	Thickest layer	0.00
65:					
Capoose	60	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.06	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
66:					
Capoose	60	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.06	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
67:					
Cashmere	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
68:					
Cashmere	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
69:					
Cashmere	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
70:					
Cashmere	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
71:					
Cashmont	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
72:					
Cashmont	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
73:					
Cedonia	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
74:					
Cedonia	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
75:					
Cedonia	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
76:					
Cedonia	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
77:					
Centralpeak	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Centralpeak	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
78:					
Centralpeak	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Centralpeak	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
79:					
Centralpeak	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Centralpeak	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
80:					
Centralpeak	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
81:					
Centralpeak	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
82:					
Centralpeak	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
83:					
Centralpeak	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Brusher	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.07

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
84:					
Centralpeak	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Centralpeak	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
85:					
Chumstick	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	25	Not rated		Not rated	
86:					
Chumstick	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	35	Not rated		Not rated	
87:					
Codylake	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
88:					
Codylake	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
89:					
Codylake	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
90:					
Colockum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
91:					
Colockum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
92:					
Colockum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
93:					
Conconully	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
94:					
Conconully	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
95:					
Conconully	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
96:					
Conconully	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
97:					
Conconully	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
98:					
Conconully	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
99:					
Conconully	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bakeoven	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
100:					
Conconully	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
101:					
Conconully	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
102:					
Conconully	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Swakane	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
103:					
Couleedam	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
104:					
Coxlake	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
105:					
Cryofluvents	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
106:					
Cubcreek	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.04
107:					
Cumulic Haploxerolls	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
108:					
Dart	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.11
		Thickest layer	0.00	Bottom layer	0.90
109:					
Dart	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.11
		Thickest layer	0.00	Bottom layer	0.90
110:					
Dart	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.11
		Thickest layer	0.00	Bottom layer	0.90
Springdale	35	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
111:					
Dart	45	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.16
		Thickest layer	0.00	Bottom layer	0.90
Springdale	40	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
112:					
Dehart	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
113:					
Dehart	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
114:					
Dehart	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Phoebe	25	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.08
		Thickest layer	0.00	Bottom layer	0.11
115:					
Dehart	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	25	Not rated		Not rated	
116:					
Dehart	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
117:					
Dinkelman	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
118:					
Dinkelman	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
119:					
Dinkelman	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
120:					
Disautel	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
121:					
Disautel	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
122:					
Disautel	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nespelem	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
123:					
Disautel	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
124:					
Donavan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
125:					
Donavan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
126:					
Donavan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
127:					
Donavan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
128:					
Donavan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
129:					
Donavan	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
130:					
Donavan	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
131:					
Donavan	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
132:					
Donavan	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
133:					
Donavan	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Goldlake	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
134:					
Donavan	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Northstar	30	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
135:					
Donavan	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
136:					
Donavan	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
Rock outcrop	20	Not rated		Not rated	
137:					
Donavan	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
Rock outcrop	20	Not rated		Not rated	
138:					
Donavan	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
139:					
Duleylake	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
140:					
Elbowlake	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
141:					
Elbowlake	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
142:					
Elbowlake	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
143:					
Elbowlake	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
144:					
Elbowlake	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
145:					
Elbowlake	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
146:					
Ellisforde	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
147:					
Ellisforde	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
148:					
Ellisforde	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
149:					
Elvedere	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
150:					
Elvedere	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
151:					
Elvedere	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
152:					
Elvedere	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Leahy	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
153:					
Emdent	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
154:					
Emdent	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
155:					
Ewall	90	Poor		Good	
		Bottom layer	0.00		
		Thickest layer	0.00		
156:					
Ewall	85	Poor		Good	
		Bottom layer	0.00		
		Thickest layer	0.00		
157:					
Ewall	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.12
		Thickest layer	0.00	Thickest layer	0.22
158:					
Ewall	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.12
		Thickest layer	0.00	Thickest layer	0.22
159:					
Ewall	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.04
		Thickest layer	0.00	Bottom layer	0.12
160:					
Farrell	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
161:					
Farrell	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
162:					
Farrell	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
163:					
Farrell	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
164:					
Fivelakes	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
165:					
Fivelakes	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
166:					
Fivelakes	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.19	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
167:					
Fivelakes	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.19	Thickest layer	0.00
168:					
Fivelakes	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
169:					
Friedlander	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
170:					
Friedlander	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
171:					
Friedlander	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
172:					
Garrison	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
173:					
Garrison	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
174:					
Garrison	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.20	Thickest layer	0.00
175:					
Georgecreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
176:					
Georgecreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
177:					
Georgecreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
178:					
Georgecreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
179:					
Ginnis	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
180:					
Ginnis	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
181:					
Ginnis	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
182:					
Ginnis	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ginnis	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
183:					
Ginnis	50	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
Ginnis	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
184:					
Ginnis	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Conconully	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
185:					
Ginnis	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Conconully	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
186:					
Ginnis	70	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
Rock outcrop	10	Not rated		Not rated	
187:					
Glenrose	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
188:					
Glenrose	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
189:					
Goddard	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
190:					
Goddard	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
191:					
Goddard	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
192:					
Goldlake	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
193:					
Gooseflats	55	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.12
		Thickest layer	0.00	Thickest layer	0.12
Gooseflats	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.11
		Thickest layer	0.00	Bottom layer	0.12
194:					
Growden	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
195:					
Hadencreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
196:					
Haley	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.50
197:					
Haley	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.50
198:					
Haley	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.50

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
199:					
Hallcreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
200:					
Haploxerolls	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
201:					
Hartill	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
202:					
Hartill	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
203:					
Hellgate	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.01
		Bottom layer	0.00	Thickest layer	0.01
204:					
Hellgate	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.01
		Bottom layer	0.00	Thickest layer	0.03
205:					
Henneway	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
206:					
Henneway	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
207:					
Henneway	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
208:					
Heytou	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Stubblefield	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
209:					
Histosols	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
210:					
Hobohill	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
211:					
Hobohill	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.07
212:					
Hodgson	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
213:					
Hodgson	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
214:					
Hodgson	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
215:					
Hodgson	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
216:					
Hudnut	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
217:					
Hudnut	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
218:					
Hunters	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
219:					
Hunters	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
220:					
Inchelium	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
221:					
Inchelium	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
222:					
Inkler	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
223:					
Inkler	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
224:					
Inkler	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
225:					
Inkler	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Baldknob	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
226:					
Inkler	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Baldknob	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
227:					
Inkler	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
228:					
Inkler	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
229:					
Jimcreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
230:					
Johntom	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
230:					
Rock outcrop	15	Not rated		Not rated	
Rubble land	10	Not rated		Not rated	
231:					
Karamin	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
232:					
Karamin	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
233:					
Karamin	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
234:					
Kartar	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.08
		Thickest layer	0.00	Thickest layer	0.08
235:					
Kellerbutte	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
236:					
Kellerbutte	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
237:					
Kenotrail	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
238:					
Kewach	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
239:					
Kewach	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
240:					
Kewach	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
241:					
Kewach	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
242:					
Kiehl	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
243:					
Kiehl	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
244:					
Kiehl	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
245:					
Kiehl	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
246:					
Kiehl	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
247:					
Kiehl	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
248:					
Koepke	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.29	Thickest layer	0.00
249:					
Lakesol	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
250:					
Lithic Xerorthents	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Baldknob	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
251:					
Lithic Xerorthents	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Baldknob	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
252:					
Logy	85	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.19	Thickest layer	0.00
253:					
Loony	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
254:					
Lostcreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
255:					
Louiecreek	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
256:					
Louploup	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.03
257:					
Louploup	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.03
258:					
Lynxcreek	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
259:					
Malott	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
260:					
Malott	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
261:					
Malott	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
262:					
Malott	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
263:					
Malott	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
264:					
Malott	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
265:					
Malott	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
266:					
Malott	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Torriorthents	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
267:					
Manley	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
268:					
Manley	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
269:					
Manley	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
270:					
Manley	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Codylake	30	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.03
271:					
Manley	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
272:					
Manley	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
273:					
Martella	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
274:					
Martella	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
275:					
Martella	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
276:					
Medisaprists	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
277:					
Merkel	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.01
278:					
Merkel	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.01
279:					
Merkel	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.01
280:					
Merkel	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
281:					
Merkel	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
282:					
Mineral	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
283:					
Mineral	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
284:					
Mineral	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
284:					
Rock outcrop	20	Not rated		Not rated	
285:					
Mineral	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
286:					
Mineral	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
287:					
Mineral	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
288:					
Mitchellpoint	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
289:					
Monse	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
290:					
Morical	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
291:					
Morical	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
292:					
Morical	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
293:					
Moscow	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06
294:					
Moscow	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.06

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
295:					
Moses	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296:					
Moses	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297:					
Moses	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298:					
Moses	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
299:					
Narcisse	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
300:					
Narcisse	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
301:					
Nespelem	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
302:					
Nespelem	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nespelem	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
303:					
Nespelem	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Emdent	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
304:					
Nespelem	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Typic Xerorthents	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
305:					
Neuske	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
306:					
Neuske	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
307:					
Nevine	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nevine	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
308:					
Nevine	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nevine	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
309:					
Nevine	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nevine	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
310:					
Nevine	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nevine	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
311:					
Nevine	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nevine	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
312:					
Newbell	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
313:					
Newbell	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
314:					
Newbell	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
315:					
Northstar	85	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
316:					
Northstar	85	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
317:					
Northstar	50	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
Johntom	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
318:					
Northstar	50	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
Johntom	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
319:					
Northstar	40	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
Louiecreek	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
320:					
Northstar	40	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
320:					
Louiecreek	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
321:					
Northstar	65	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
322:					
Ohscow	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
323:					
Ohscow	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
324:					
Ohscow	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
325:					
Ohscow	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
326:					
Okanogan	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
327:					
Omak	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
328:					
Owhi	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
329:					
Owhi	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
330:					
Owhi	45	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.06
Haley	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.50

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
331:					
Oxerine	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
332:					
Oxerine	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
333:					
Oxerine	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
334:					
Oxerine	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
335:					
Oxerine	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
336:					
Parmenter	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
337:					
Parmenter	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
338:					
Parmenter	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
339:					
Parmenter	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
340:					
Peshastin	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
341:					
Peshastin	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
342:					
Peshastin	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
343:					
Phoebe	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.11
344:					
Phoebe	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.11
345:					
Phoebe	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.11
346:					
Phoebe	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.11
347:					
Phoebe	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.11
348:					
Phoebe	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.11
349:					
Phoebe	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.07
		Thickest layer	0.00	Bottom layer	0.11
350:					
Phoebe	55	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.08
		Thickest layer	0.00	Bottom layer	0.11
Dehart	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
351:					
Picard	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.04
352:					
Picard	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.04
353:					
Pits	100	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
354:					
Pogue	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
355:					
Pogue	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
356:					
Pogue	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
357:					
Pogue	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
358:					
Pogue	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
359:					
Pogue	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
360:					
Poween	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
361:					
Quincy	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.16
		Thickest layer	0.00	Thickest layer	0.72
362:					
Quincy	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.16
		Thickest layer	0.00	Thickest layer	0.72
363:					
Quincy	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.12
		Thickest layer	0.00	Bottom layer	0.72
364:					
Quincy	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.16
		Thickest layer	0.00	Bottom layer	0.72
365:					
Quincy	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.12
		Thickest layer	0.00	Bottom layer	0.72

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
366:					
Quincy	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.16
		Thickest layer	0.00	Bottom layer	0.72
367:					
Quincy	55	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.12
		Thickest layer	0.00	Bottom layer	0.16
Aeneas	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
368:					
Raisio	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
369:					
Raisio	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
370:					
Raisio	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rufus	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
371:					
Raisio	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rufus	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
372:					
Raisio	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rufus	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
373:					
Raisio	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rufus	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
373:					
Rock outcrop	15	Not rated		Not rated	
374:					
Raisio	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rufus	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
375:					
Raisio	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rufus	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
376:					
Ralsen	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
377:					
Ratlake	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
378:					
Reardan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
379:					
Reardan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
380:					
Rebecca	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
381:					
Rebecca	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
382:					
Renha	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
383:					
Renha	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
384:					
Renha	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Oxerine	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
385:					
Republic	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
386:					
Republic	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
387:					
Republic	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
388:					
Resner	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
389:					
Resner	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
390:					
Ret	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10
391:					
Riverwash	100	Not rated		Not rated	
392:					
Rock outcrop	100	Not rated		Not rated	
393:					
Rock outcrop	55	Not rated		Not rated	
Chumstick	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
394:					
Rock outcrop	55	Not rated		Not rated	
Chumstick	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
395:					
Rock outcrop	50	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
395:					
Mineral	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
396:					
Rock outcrop	55	Not rated		Not rated	
Rufus	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
397:					
Rock outcrop	45	Not rated		Not rated	
Soaplake	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
398:					
Rock outcrop	50	Not rated		Not rated	
Swakane	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
399:					
Rock outcrop	45	Not rated		Not rated	
Vanbrunt	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
400:					
Roosevelt	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Soaplake	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
401:					
Roosevelt	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Soaplake	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
402:					
Rubble land	100	Not rated		Not rated	
403:					
Rubble land	60	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
403:					
Rock outcrop	25	Not rated		Not rated	
404:					
Rubble land	40	Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated	
Haploxerolls	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
405:					
Sacheen	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.11
406:					
Sacheen	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.11
407:					
Sacheen	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.11
408:					
Sanpoil	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
409:					
Sanpoil	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
410:					
Scala	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.01
411:					
Sclome	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
412:					
Scoap	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
413:					
Scoap	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
414:					
Scoap	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
415:					
Scoap	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
416:					
Scoap	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
417:					
Scrabblers	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.06
		Thickest layer	0.00	Bottom layer	0.10
418:					
Scrabblers	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.06
		Thickest layer	0.00	Bottom layer	0.10
419:					
Scrabblers	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10
420:					
Scrabblers	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10
421:					
Sitdown	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
422:					
Skaha	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.03
423:					
Skaha	85	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.03
424:					
Skaha	85	Fair		Poor	
		Bottom layer	0.25	Bottom layer	0.00
		Thickest layer	0.38	Thickest layer	0.00
425:					
Skaha	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
426:					
Skaha	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
427:					
Skaha	60	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
428:					
Skanid	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
429:					
Skanid	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
430:					
Skanid	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
431:					
Skanid	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
432:					
Skanid	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
433:					
Skanid	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
434:					
Skanid	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
435:					
Skanid	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
436:					
Skanid	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
437:					
Spens	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
438:					
Spens	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
439:					
Spokane	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
440:					
Spokane	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
441:					
Spokane	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
442:					
Spokane	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
443:					
Spokane	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
444:					
Spokane	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
445:					
Spokane	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
446:					
Spokane	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Skanid	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
447:					
Spokane	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Skanid	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
448:					
Spokane	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Skanid	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
449:					
Springdale	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
450:					
Springdale	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
451:					
Springdale	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
452:					
Stapaloop	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.01
		Thickest layer	0.00	Bottom layer	0.06
453:					
Stapaloop	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.01
		Thickest layer	0.00	Bottom layer	0.06
454:					
Stapaloop	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.01
		Thickest layer	0.00	Bottom layer	0.06
455:					
Stepstone	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
456:					
Stepstone	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
457:					
Stepstone	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
458:					
Stepstone	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
459:					
Stevens	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
460:					
Stevens	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
461:					
Stevens	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
462:					
Stevens	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
463:					
Strat	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
464:					
Stubblefield	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
465:					
Swakane	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
466:					
Swakane	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
467:					
Swakane	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	35	Not rated		Not rated	
468:					
Swipkin	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
469:					
Swipkin	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
470:					
Thout	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
471:					
Thout	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
472:					
Thout	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
473:					
Thout	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
474:					
Timentwa	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
475:					
Timentwa	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
476:					
Timentwa	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
477:					
Timentwa	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Timentwa	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
478:					
Timentwa	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Timentwa	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
479:					
Timentwa	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bakeoven	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
480:					
Togo	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
481:					
Togo	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
482:					
Togo	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
483:					
Togo	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
484:					
Togo	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
485:					
Torboy	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.07
486:					
Torboy	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.07
487:					
Torrifluventic Haploxerolls	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.12
488:					
Tunkcreek	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.22
		Thickest layer	0.00	Thickest layer	0.22

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
489:					
Tunkcreek	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.22
		Thickest layer	0.00	Thickest layer	0.22
490:					
Tyee	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
491:					
Tyee	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
492:					
Tyee	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
493:					
Tyee	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Morical	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Tyee	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
494:					
Tyee	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
495:					
Tyee	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
496:					
Typic Haplaquolls	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
497:					
Typic Xerorthents	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
Typic Xerochrepts	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
498:					
Ultic Haploxerolls	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
499:					
Uncas	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
500:					
Vanbrunt	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
501:					
Vanbrunt	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
502:					
Vanbrunt	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
503:					
Wannacott	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
504:					
Wannacott	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
505:					
Wapal	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.03
506:					
Wapal	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
507:					
Wapal	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.03
508:					
Wapal	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.03

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
509:					
Wellscreek	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
510:					
Wellscreek	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
511:					
Wellscreek	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
512:					
Whitestone	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
513:					
Whitestone	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
514:					
Whitestone	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
515:					
Whitestone	85	Fair		Poor	
		Thickest layer	0.06	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
516:					
Whitestone	65	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
517:					
Wilmont	80	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
518:					
Wilmont	80	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
519:					
Wilmont	80	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
520:					
Wilmont	80	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
521:					
Winchester	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.12
		Thickest layer	0.00	Bottom layer	0.91
522:					
Winchester	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.12
		Thickest layer	0.00	Bottom layer	0.91
523:					
Winchester	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.12
		Thickest layer	0.00	Bottom layer	0.91
524:					
Winchester	70	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.12
		Thickest layer	0.00	Bottom layer	0.91
Rock outcrop	20	Not rated		Not rated	
525:					
Winthrop	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
526:					
Wynhoff	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
527:					
Wynhoff	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
528:					
Xeric Torriorthents	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.04
529:					
Xeric Torriorthents	85	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
530:					
Xerochrepts	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rubble land	25	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	

Table 15.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
531:					
Water	100	Not rated		Not rated	
532:					
Dam	100	Not rated		Not rated	

Table 16.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Achimin	90	Fair		Fair		Good	
		Low content of organic matter	0.88	Low strength	0.22		
		Water erosion	0.90				
2:							
Achimin	60	Fair		Fair		Poor	
		Low content of organic matter	0.88	Low strength	0.22	Slope	0.00
		Water erosion	0.90	Slope	0.68		
Calcic Pachic Haploxerolls	30	Fair		Fair		Fair	
		Water erosion	0.37	Depth to saturated zone	0.89	Slope	0.37
		Carbonate content	0.68			Depth to saturated zone	0.89
						Rock fragments	0.97
3:							
Aeneas	90	Fair		Good		Good	
		Low content of organic matter	0.12				
		Droughty	0.97				
4:							
Aeneas	85	Fair		Good		Good	
		Low content of organic matter	0.12				
		Droughty	0.97				
5:							
Ahtanum	85	Poor		Poor		Poor	
		Salinity	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Droughty	0.00	Depth to cemented pan	0.00	Salinity	0.00
		Too alkaline	0.00			Depth to cemented pan	0.10
		Depth to cemented pan	0.10			Sodium content	0.60
		Water erosion	0.37				
		Sodium content	0.60				
6:							
Aits	80	Fair		Good		Poor	
		Droughty	0.63			Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.16
						Hard to reclaim	0.26
7:							
Aits	80	Fair		Poor		Poor	
		Droughty	0.63	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
						Hard to reclaim	0.26

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8:							
Aits	85	Fair		Good		Fair	
		Low content of organic matter	0.88			Hard to reclaim	0.08
		Too acid	0.99			Rock fragments	0.12
9:							
Anders	85	Fair		Poor		Fair	
		Depth to bedrock	0.05	Depth to bedrock	0.00	Depth to bedrock	0.05
		Droughty	0.34			Rock fragments	0.97
		Water erosion	0.90				
10:							
Andic Cryaquepts	80	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.95			Hard to reclaim	0.18
		No water erosion limitation	0.99				
11:							
Annum	85	Fair		Fair		Poor	
		Water erosion	0.68	Low strength	0.78	Slope	0.00
		Low content of organic matter	0.88	Depth to bedrock	0.82	Hard to reclaim	0.98
				Slope	0.92		
				Shrink-swell	0.96		
12:							
Annum	85	Fair		Fair		Poor	
		Water erosion	0.68	Low strength	0.78	Slope	0.00
		Low content of organic matter	0.88	Depth to bedrock	0.87	Hard to reclaim	0.98
				Slope	0.92		
				Shrink-swell	0.98		
13:							
Annum	45	Fair		Fair		Poor	
		Water erosion	0.68	Low strength	0.78	Slope	0.00
		Low content of organic matter	0.88	Depth to bedrock	0.87	Hard to reclaim	0.98
				Slope	0.92		
				Shrink-swell	0.98		
Annum	40	Fair		Fair		Poor	
		Water erosion	0.68	Low strength	0.78	Slope	0.00
		Low content of organic matter	0.88	Depth to bedrock	0.82	Hard to reclaim	0.98
				Slope	0.92		
				Shrink-swell	0.96		
14:							
Apex	80	Fair		Good		Fair	
		Droughty	0.59			Rock fragments	0.03
		Low content of organic matter	0.88			Slope	0.16
						Hard to reclaim	0.54
15:							
Apex	80	Fair		Poor		Poor	
		Droughty	0.59	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.03

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16:							
Apex	80	Fair		Poor		Poor	
		Droughty	0.59	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.03
						Hard to reclaim	0.54
17:							
Apex	85	Fair		Good		Fair	
		Droughty	0.28			Rock fragments	0.03
		Low content of organic matter	0.88			Slope	0.16
						Hard to reclaim	0.26
18:							
Apex	85	Fair		Poor		Poor	
		Droughty	0.28	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.03
						Hard to reclaim	0.26
19:							
Apex	80	Fair		Poor		Poor	
		Droughty	0.28	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.03
						Hard to reclaim	0.26
20:							
Aquic Xerofluvents	85	Fair		Fair		Poor	
		Low content of organic matter	0.50	Depth to saturated zone	0.04	Rock fragments	0.00
		Droughty	0.79			Depth to saturated zone	0.04
		No water erosion limitation	0.99			Hard to reclaim	0.18
21:							
Aquic Xerofluvents	90	Fair		Fair		Poor	
		Droughty	0.54	Depth to saturated zone	0.04	Rock fragments	0.00
						Depth to saturated zone	0.04
						Hard to reclaim	0.68
22:							
Aquic Xerofluvents	85	Good		Fair		Fair	
				Depth to saturated zone	0.04	Depth to saturated zone	0.04
						Hard to reclaim	0.18
23:							
Badge	85	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
		Stone content	0.53	Stone content	0.05	Rock fragments	0.00
		Cobble content	0.96	Cobble content	0.36	Hard to reclaim	0.00
24:							
Badge	65	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
		Stone content	0.53	Stone content	0.05	Rock fragments	0.00
		Cobble content	0.96	Cobble content	0.36	Hard to reclaim	0.00
Rubble land	20	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25:							
Badland	100	Not rated		Not rated		Not rated	
26:							
Bakeoven	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Cobble content	0.03	Depth to bedrock	0.00
		Cobble content	0.00			Slope	0.04
27:							
Bakeoven	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Cobble content	0.03	Depth to bedrock	0.00
		Cobble content	0.00			Slope	0.00
Olical	25	Poor		Fair		Poor	
		Too alkaline	0.00	Depth to bedrock	0.68	Slope	0.00
		Water erosion	0.68			Hard to reclaim	0.08
		Carbonate content	0.68				
28:							
Bakeoven	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Cobble content	0.03	Depth to bedrock	0.00
		Cobble content	0.00			Slope	0.00
Timentwa	30	Poor		Fair		Poor	
		Wind erosion	0.00	Depth to cemented pan	0.95	Slope	0.00
		Water erosion	0.90			Rock fragments	0.12
		Carbonate content	0.97			Hard to reclaim	0.88
Rock outcrop	15	Not rated		Not rated		Not rated	
29:							
Baldknob	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Stone content	0.94	Depth to bedrock	0.00
		Stone content	0.94			Slope	0.16
Thout	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Slope	0.16
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
30:							
Baldknob	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.94	Stone content	0.94	Depth to bedrock	0.00
Thout	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31:							
Barnellcreek	85	Poor		Fair		Fair	
		Wind erosion	0.00	Depth to saturated zone	0.68	Depth to saturated zone	0.68
		No water erosion limitation	0.99			Hard to reclaim	0.82
						Slope	0.84
						Rock fragments	0.97
32:							
Bearspring	85	Good		Poor		Poor	
				Slope	0.00	Slope	0.00
						Hard to reclaim	0.00
						Rock fragments	0.00
33:							
Bearspring	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Droughty	0.96	Cobble content	0.85	Hard to reclaim	0.00
						Rock fragments	0.00
34:							
Bernhill	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.12
		Water erosion	0.90			Hard to reclaim	0.68
35:							
Bernhill	80	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.12
		Water erosion	0.90			Slope	0.16
						Hard to reclaim	0.68
36:							
Beverly	85	Poor		Good		Poor	
		Wind erosion	0.00			Hard to reclaim	0.00
		Droughty	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.04
37:							
Bisbee	80	Poor		Good		Fair	
		Wind erosion	0.00			Slope	0.84
		Low content of organic matter	0.88				
		Droughty	0.95				
38:							
Bisbee	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88				
		Droughty	0.95				
39:							
Boesel	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.89	Hard to reclaim	0.00
		Droughty	0.71			Depth to saturated zone	0.89

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40:							
Bong	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.16
		Droughty	0.17			Rock fragments	0.28
						Hard to reclaim	0.88
41:							
Bong	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.17			Rock fragments	0.28
						Hard to reclaim	0.88
42:							
Bong	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.28
		Droughty	0.35			Hard to reclaim	0.88
43:							
Borgeau	85	Fair		Fair		Poor	
		Low content of organic matter	0.88	Slope	0.68	Hard to reclaim	0.00
		Droughty	0.92	Cobble content	0.94	Rock fragments	0.00
		Too acid	0.95			Slope	0.00
44:							
Borgeau	80	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Droughty	0.92	Cobble content	0.94	Hard to reclaim	0.00
		Too acid	0.95			Rock fragments	0.00
45:							
Borgeau	55	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Droughty	0.92	Cobble content	0.94	Hard to reclaim	0.00
		Too acid	0.95			Rock fragments	0.00
Rock outcrop	25	Not rated		Not rated		Not rated	
46:							
Borosaprists	85	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Rock fragments	0.00
						Content of organic matter	0.78
						Hard to reclaim	0.92
47:							
Bossburg	90	Fair		Poor		Poor	
		No water erosion limitation	0.99	Depth to saturated zone	0.00	Depth to saturated zone	0.00
48:							
Broadax	85	Fair		Poor		Good	
		Water erosion	0.68	Low strength	0.00		
				Shrink-swell	0.99		

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
49:							
Broadax	85	Fair		Poor		Fair	
		Water erosion	0.68	Low strength	0.00	Slope	0.37
				Shrink-swell	0.99		
50:							
Brusher	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.28
		Water erosion	0.90				
51:							
Brusher	85	Poor		Fair		Poor	
		Wind erosion	0.00	Slope	0.50	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.88
		Water erosion	0.90				
52:							
Brusher	85	Poor		Fair		Fair	
		Wind erosion	0.00			Rock fragments	0.28
		Low content of organic matter	0.12			Slope	0.84
		Water erosion	0.90				
53:							
Brusher	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.28
		Water erosion	0.90				
54:							
Buhrig	85	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Slope	0.00	Depth to bedrock	0.71
		Depth to bedrock	0.71	Cobble content	0.63		
		No cobble limitation	0.99				
55:							
Buhrig	85	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Stone content	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.71
		Depth to bedrock	0.71	Cobble content	0.63		
		No cobble limitation	0.99				
56:							
Buhrig	85	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.14	Stone content	0.00	Depth to bedrock	0.65
		Depth to bedrock	0.65				
		No water erosion limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
57:							
Buhrig	60	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Slope	0.00	Depth to bedrock	0.71
				Cobble content	0.63		
		Depth to bedrock	0.71				
		No cobble limitation	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
58:							
Buhrig	60	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Stone content	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Depth to bedrock	0.71
				Cobble content	0.63		
		Depth to bedrock	0.71				
		No cobble limitation	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
59:							
Canteen	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
				Depth to bedrock	0.58	Rock fragments	0.03
		Water erosion	0.90			Hard to reclaim	0.92
		Droughty	0.99				
60:							
Canteen	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
				Depth to bedrock	0.58	Rock fragments	0.03
		Water erosion	0.90			Hard to reclaim	0.92
		Droughty	0.99				
61:							
Canteen	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Depth to bedrock	0.58	Rock fragments	0.03
		Water erosion	0.90			Hard to reclaim	0.92
62:							
Canteen	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Depth to bedrock	0.58	Rock fragments	0.03
		Water erosion	0.90			Hard to reclaim	0.92
63:							
Capoose	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.55	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.99	Depth to bedrock	0.90
		Depth to bedrock	0.90				
		No water erosion limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
64:							
Capoose	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.55	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.99	Depth to bedrock	0.90
		Depth to bedrock	0.90				
		No water erosion limitation	0.99				
65:							
Capoose	60	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.55	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.99	Depth to bedrock	0.90
		Depth to bedrock	0.90				
		No water erosion limitation	0.99				
Rock outcrop	15	Not rated		Not rated		Not rated	
66:							
Capoose	60	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.55	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.99	Depth to bedrock	0.90
		Depth to bedrock	0.90				
		No water erosion limitation	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
67:							
Cashmere	85	Good		Good		Good	
68:							
Cashmere	85	Good		Good		Good	
69:							
Cashmere	85	Good		Fair		Poor	
				Slope	0.82	Slope	0.00
70:							
Cashmere	85	Good		Poor		Poor	
				Slope	0.00	Slope	0.00
71:							
Cashmont	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.02
		Droughty	0.96			Slope	0.96
72:							
Cashmont	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.08	Slope	0.00
						Rock fragments	0.00
		Droughty	0.96			Hard to reclaim	0.02

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73:							
Cedonia	80	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Water erosion	0.37				
74:							
Cedonia	80	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.84
		Water erosion	0.37				
75:							
Cedonia	75	Fair		Poor		Poor	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.00
		Water erosion	0.37	Slope	0.08		
76:							
Cedonia	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Water erosion	0.37	Low strength	0.00		
77:							
Centralpeak	45	Fair		Poor		Fair	
		Droughty	0.15	Depth to bedrock	0.00	Slope	0.16
		Depth to bedrock	0.54			Depth to bedrock	0.54
		Low content of organic matter	0.88			Rock fragments	0.72
		No water erosion limitation	0.99				
Centralpeak	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.17			Slope	0.16
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				
78:							
Centralpeak	45	Fair		Poor		Poor	
		Droughty	0.15	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.88			Rock fragments	0.72
		No water erosion limitation	0.99				
Centralpeak	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.17	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
79:							
Centralpeak	45	Fair		Poor		Poor	
		Droughty	0.15	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.88			Rock fragments	0.72
		No water erosion limitation	0.99				
Centralpeak	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.17	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				
80:							
Centralpeak	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.17			Slope	0.16
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				
81:							
Centralpeak	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.17	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				
82:							
Centralpeak	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.17	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				
83:							
Centralpeak	65	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.17	Slope	0.82	Slope	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				
Brusher	20	Poor		Fair		Poor	
		Wind erosion	0.00	Slope	0.82	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.88
		Water erosion	0.90				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
84:							
Centralpeak	35	Fair		Poor		Poor	
		Droughty	0.15	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Depth to bedrock	0.54
		Low content of organic matter	0.88			Rock fragments	0.72
		No water erosion limitation	0.99				
Centralpeak	30	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.17	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Depth to bedrock	0.54
		No water erosion limitation	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
85:							
Chumstick	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Stone content	0.72	Depth to bedrock	0.00
		Stone content	0.72			Slope	0.16
		Too acid	0.95				
Rock outcrop	25	Not rated		Not rated		Not rated	
86:							
Chumstick	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.72	Stone content	0.72	Depth to bedrock	0.00
		Too acid	0.95				
Rock outcrop	35	Not rated		Not rated		Not rated	
87:							
Codylake	90	Poor		Fair		Fair	
		Wind erosion	0.00	Depth to bedrock	0.58	Slope	0.16
		No water erosion limitation	0.99			Rock fragments	0.88
		Droughty	0.99				
88:							
Codylake	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		No water erosion limitation	0.99	Depth to bedrock	0.58	Rock fragments	0.88
		Droughty	0.99				
89:							
Codylake	90	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		No water erosion limitation	0.99	Depth to bedrock	0.58	Rock fragments	0.88
		Droughty	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
90:							
Colockum	85	Fair		Fair		Fair	
		Carbonate content	0.68	Low strength	0.78	Slope	0.37
		Water erosion	0.90			Rock fragments	0.50
91:							
Colockum	85	Fair		Good		Fair	
		Carbonate content	0.68			Slope	0.04
		Low content of organic matter	0.88			Rock fragments	0.24
		No water erosion limitation	0.99			Hard to reclaim	0.32
92:							
Colockum	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Carbonate content	0.68			Rock fragments	0.24
						Hard to reclaim	0.32
93:							
Conconully	90	Fair		Good		Poor	
		Droughty	0.30			Rock fragments	0.00
		Low content of organic matter	0.50			Slope	0.37
						Hard to reclaim	0.90
94:							
Conconully	85	Fair		Fair		Poor	
		Droughty	0.30	Slope	0.08	Slope	0.00
		Low content of organic matter	0.50			Rock fragments	0.00
						Hard to reclaim	0.90
95:							
Conconully	85	Fair		Good		Poor	
		Droughty	0.09			Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.04
						Hard to reclaim	0.71
96:							
Conconully	80	Fair		Poor		Poor	
		Droughty	0.09	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
						Hard to reclaim	0.71
97:							
Conconully	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
						Hard to reclaim	0.01
						Rock fragments	0.72
98:							
Conconully	85	Poor		Fair		Poor	
		Droughty	0.00	Slope	0.82	Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.00
						Hard to reclaim	0.16
99:							
Conconully	50	Fair		Good		Poor	
		Droughty	0.09			Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.04
						Hard to reclaim	0.71

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
99:							
Bakeoven	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Cobble content	0.03	Depth to bedrock	0.00
		Cobble content	0.00			Slope	0.04
100:							
Conconully	60	Poor		Fair		Poor	
		Droughty	0.00	Slope	0.82	Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.00
						Hard to reclaim	0.01
Rock outcrop	20	Not rated		Not rated		Not rated	
101:							
Conconully	60	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
						Hard to reclaim	0.01
Rock outcrop	20	Not rated		Not rated		Not rated	
102:							
Conconully	40	Poor		Good		Poor	
		Droughty	0.00			Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.04
						Hard to reclaim	0.16
Swakane	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Stone content	0.84	Depth to bedrock	0.00
		Stone content	0.84	Slope	0.92	Slope	0.00
				Cobble content	0.98		
Rock outcrop	15	Not rated		Not rated		Not rated	
103:							
Couleedam	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Cobble content	0.95	Depth to bedrock	0.00
		Stone content	0.99	Stone content	0.99		
Rock outcrop	30	Not rated		Not rated		Not rated	
104:							
Coxlake	85	Fair		Poor		Poor	
		No water erosion limitation	0.99	Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Hard to reclaim	0.68
105:							
Cryofluvents	90	Fair		Fair		Poor	
		Low content of organic matter	0.50	Depth to saturated zone	0.29	Rock fragments	0.00
		Too acid	0.95			Hard to reclaim	0.02
		No water erosion limitation	0.99			Depth to saturated zone	0.29
		Droughty	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
106:							
Cubcreek	90	Fair		Fair		Fair	
		Low content of organic matter	0.88	Depth to saturated zone	0.62	Depth to saturated zone	0.62
						Rock fragments	0.72
107:							
Cumulic Haploxerolls	85	Good		Fair		Poor	
				Depth to saturated zone	0.89	Rock fragments	0.00
						Hard to reclaim	0.18
						Depth to saturated zone	0.89
108:							
Dart	85	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.94
		Droughty	0.10			Rock fragments	0.97
		Low content of organic matter	0.12				
		Too sandy	0.94				
109:							
Dart	85	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Wind erosion	0.00			Too sandy	0.00
		Droughty	0.03			Rock fragments	0.97
		Low content of organic matter	0.12				
110:							
Dart	50	Poor		Fair		Poor	
		Wind erosion	0.00	Slope	0.82	Slope	0.00
		Droughty	0.10			Too sandy	0.94
		Low content of organic matter	0.12			Rock fragments	0.97
		Too sandy	0.94				
Springdale	35	Poor		Fair		Poor	
		Droughty	0.00	Slope	0.82	Hard to reclaim	0.00
		Low content of organic matter	0.12	Cobble content	0.89	Rock fragments	0.00
						Slope	0.00
111:							
Dart	45	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Wind erosion	0.00			Too sandy	0.00
		Droughty	0.00			Rock fragments	0.97
		Low content of organic matter	0.12				
Springdale	40	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.89	Hard to reclaim	0.00
						Rock fragments	0.00
112:							
Dehart	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.68	Hard to reclaim	0.00
						Rock fragments	0.00
		Droughty	0.80			Slope	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
113:							
Dehart	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.80			Hard to reclaim	0.00
						Rock fragments	0.00
114:							
Dehart	60	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.80			Hard to reclaim	0.00
						Rock fragments	0.00
Phoebe	25	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
115:							
Dehart	55	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.68	Hard to reclaim	0.00
		Droughty	0.80			Rock fragments	0.00
						Slope	0.00
Rock outcrop	25	Not rated		Not rated		Not rated	
116:							
Dehart	50	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.80			Hard to reclaim	0.00
						Rock fragments	0.00
Rock outcrop	30	Not rated		Not rated		Not rated	
117:							
Dinkelman	85	Fair		Fair		Poor	
		Low content of organic matter	0.50	Depth to bedrock	0.58	Rock fragments	0.00
		Droughty	0.97			Slope	0.16
118:							
Dinkelman	85	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
		Droughty	0.97	Depth to bedrock	0.58	Rock fragments	0.00
119:							
Dinkelman	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.24	Depth to bedrock	0.58	Rock fragments	0.00
120:							
Disautel	85	Fair		Good		Fair	
		Carbonate content	0.68			Hard to reclaim	0.71
		Droughty	0.85			Rock fragments	0.97
		Low content of organic matter	0.88				
		Water erosion	0.90				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
121:							
Disautel	85	Fair		Good		Fair	
		Carbonate content	0.68			Slope	0.37
		Droughty	0.85			Hard to reclaim	0.71
		Low content of organic matter	0.88			Rock fragments	0.97
		Water erosion	0.90				
122:							
Disautel	60	Fair		Good		Fair	
		Carbonate content	0.68			Slope	0.37
		Droughty	0.85			Hard to reclaim	0.71
		Low content of organic matter	0.88			Rock fragments	0.97
		Water erosion	0.90				
Nespelem	30	Fair		Poor		Fair	
		Droughty	0.49	Depth to cemented pan	0.00	Slope	0.37
		Depth to cemented pan	0.54			Depth to cemented pan	0.54
		Water erosion	0.90				
123:							
Disautel	50	Fair		Fair		Poor	
		Carbonate content	0.68	Slope	0.92	Slope	0.00
		Droughty	0.85			Hard to reclaim	0.71
		Low content of organic matter	0.88			Rock fragments	0.97
		Water erosion	0.90				
Rock outcrop	30	Not rated		Not rated		Not rated	
124:							
Donavan	85	Fair		Good		Poor	
		Droughty	0.14			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.80
						Slope	0.84
125:							
Donavan	85	Fair		Fair		Poor	
		Droughty	0.14	Slope	0.08	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
						Hard to reclaim	0.80
126:							
Donavan	85	Fair		Good		Fair	
		Droughty	0.26			Rock fragments	0.03
		Low content of organic matter	0.88			Slope	0.16
						Hard to reclaim	0.94
127:							
Donavan	85	Fair		Poor		Poor	
		Droughty	0.26	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.03
						Hard to reclaim	0.94
128:							
Donavan	85	Poor		Good		Fair	
		Droughty	0.00			Hard to reclaim	0.01
						Slope	0.84
						Rock fragments	0.97

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
129:							
Donavan	90	Poor		Fair		Poor	
		Droughty	0.00	Slope	0.08	Slope	0.00
						Hard to reclaim	0.01
						Rock fragments	0.97
130:							
Donavan	90	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
						Hard to reclaim	0.01
						Rock fragments	0.97
131:							
Donavan	90	Poor		Good		Fair	
		Droughty	0.00			Hard to reclaim	0.01
						Slope	0.16
						Rock fragments	0.28
132:							
Donavan	90	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
						Hard to reclaim	0.01
						Rock fragments	0.28
133:							
Donavan	55	Poor		Good		Fair	
		Droughty	0.00			Hard to reclaim	0.01
						Slope	0.84
						Rock fragments	0.97
Goldlake	30	Fair		Good		Fair	
		Water erosion	0.90			Hard to reclaim	0.92
134:							
Donavan	50	Poor		Fair		Poor	
		Droughty	0.00	Slope	0.82	Slope	0.00
						Hard to reclaim	0.01
						Rock fragments	0.97
Northstar	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.72	Slope	0.00
		Too acid	0.95	Slope	0.82	Depth to bedrock	0.54
135:							
Donavan	65	Fair		Good		Fair	
		Droughty	0.26			Rock fragments	0.03
		Low content of organic matter	0.88			Slope	0.16
						Hard to reclaim	0.94
Rock outcrop	20	Not rated		Not rated		Not rated	
136:							
Donavan	60	Poor		Good		Fair	
		Droughty	0.00			Hard to reclaim	0.01
						Slope	0.16
						Rock fragments	0.28
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
137:							
Donavan	60	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
						Hard to reclaim	0.01
						Rock fragments	0.28
Rock outcrop	20	Not rated		Not rated		Not rated	
138:							
Donavan	65	Fair		Poor		Poor	
		Droughty	0.26	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.03
						Hard to reclaim	0.94
Rock outcrop	20	Not rated		Not rated		Not rated	
139:							
Duleylake	85	Fair		Fair		Fair	
		Low content of organic matter	0.12	Depth to saturated zone	0.44	Depth to saturated zone	0.44
140:							
Elbowlake	80	Poor		Good		Poor	
		Wind erosion	0.00			Hard to reclaim	0.00
		Droughty	0.03			Slope	0.16
		No water erosion limitation	0.99				
141:							
Elbowlake	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.03			Hard to reclaim	0.00
		No water erosion limitation	0.99				
142:							
Elbowlake	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.03			Hard to reclaim	0.00
		No water erosion limitation	0.99				
143:							
Elbowlake	85	Poor		Good		Poor	
		Wind erosion	0.00			Hard to reclaim	0.00
		Droughty	0.17			Slope	0.16
		No water erosion limitation	0.99				
144:							
Elbowlake	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.17			Hard to reclaim	0.00
		No water erosion limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
145:							
Elbowlake	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.17			Hard to reclaim	0.00
		No water erosion limitation	0.99				
146:							
Ellisforde	85	Fair		Good		Good	
		Low content of organic matter	0.12				
		Water erosion	0.68				
147:							
Ellisforde	80	Fair		Good		Good	
		Low content of organic matter	0.12				
		Water erosion	0.68				
148:							
Ellisforde	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.82	Slope	0.00
		Water erosion	0.68				
149:							
Elvedere	85	Fair		Poor		Poor	
		Too clayey	0.12	Low strength	0.00	Slope	0.00
		Water erosion	0.68	Slope	0.08	Too clayey	0.09
		Low content of organic matter	0.88	Shrink-swell	0.87		
150:							
Elvedere	85	Fair		Poor		Fair	
		Too clayey	0.12	Low strength	0.00	Slope	0.04
		Water erosion	0.68	Shrink-swell	0.87	Too clayey	0.09
		Low content of organic matter	0.88				
151:							
Elvedere	85	Fair		Poor		Poor	
		Too clayey	0.12	Slope	0.00	Slope	0.00
		Water erosion	0.68	Low strength	0.00	Too clayey	0.09
		Low content of organic matter	0.88	Shrink-swell	0.87		
152:							
Elvedere	60	Fair		Poor		Fair	
		Too clayey	0.12	Low strength	0.00	Too clayey	0.09
		Water erosion	0.68	Shrink-swell	0.87		
		Low content of organic matter	0.88				
Leahy	30	Poor		Poor		Poor	
		Too alkaline	0.00	Low strength	0.00	Sodium content	0.00
		Sodium content	0.00	Depth to saturated zone	0.80	Salinity	0.00
		Salinity	0.00			Too clayey	0.07
		Low content of organic matter	0.12	Shrink-swell	0.87	Depth to saturated zone	0.80
		Too clayey	0.12				
		Water erosion	0.68				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
153:							
Emdent	80	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Sodium content	0.00			Sodium content	0.22
		Too alkaline	0.00				
		Low content of organic matter	0.12				
		Water erosion	0.68				
154:							
Emdent	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Sodium content	0.00			Sodium content	0.00
		Too alkaline	0.00			Salinity	0.50
		Water erosion	0.90				
155:							
Ewall	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.97
		Droughty	0.00				
		Low content of organic matter	0.12				
156:							
Ewall	85	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.82	Too sandy	0.00
		Wind erosion	0.00			Slope	0.00
		Droughty	0.00			Rock fragments	0.97
		Low content of organic matter	0.12				
157:							
Ewall	90	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.22
		Low content of organic matter	0.12			Rock fragments	0.97
		Too sandy	0.22				
		Droughty	0.31				
158:							
Ewall	90	Poor		Fair		Poor	
		Wind erosion	0.00	Slope	0.82	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.22
		Too sandy	0.22			Rock fragments	0.97
		Droughty	0.31				
159:							
Ewall	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.11			Rock fragments	0.72
		Too sandy	0.78			Too sandy	0.78
160:							
Farrell	85	Fair		Good		Good	
		Low content of organic matter	0.12				
		Carbonate content	0.68				
		No water erosion limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
161:							
Farrell	90	Fair		Good		Good	
		Low content of organic matter	0.12				
		Carbonate content	0.68				
		No water erosion limitation	0.99				
162:							
Farrell	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.82	Slope	0.00
		Carbonate content	0.68				
		No water erosion limitation	0.99				
163:							
Farrell	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Carbonate content	0.68
		Carbonate content	0.68			Slope	0.84
164:							
Fivelakes	85	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.01	Stone content	0.00	Hard to reclaim	0.00
		Low content of organic matter	0.12	Cobble content	0.03	Rock fragments	0.00
		Cobble content	0.71				
165:							
Fivelakes	80	Fair		Fair		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.89	Hard to reclaim	0.00
		Droughty	0.24			Rock fragments	0.00
						Depth to saturated zone	0.89
166:							
Fivelakes	85	Fair		Fair		Poor	
		Droughty	0.07	Cobble content	0.73	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Slope	0.16
167:							
Fivelakes	85	Fair		Poor		Poor	
		Droughty	0.07	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.73	Hard to reclaim	0.00
						Rock fragments	0.00
168:							
Fivelakes	85	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Hard to reclaim	0.00
		Droughty	0.04	Cobble content	0.22	Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Cobble content	0.86				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
169:							
Friedlander	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.29	Slope	0.84
		Water erosion	0.68			Rock fragments	0.97
		Too acid	0.95				
170:							
Friedlander	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.00	Too clayey	0.00
		Water erosion	0.68	Shrink-swell	0.29	Rock fragments	0.97
		Too acid	0.95				
171:							
Friedlander	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.29	Slope	0.84
		Water erosion	0.68			Rock fragments	0.97
		Too acid	0.95				
172:							
Garrison	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Droughty	0.49			Rock fragments	0.00
173:							
Garrison	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Droughty	0.49			Rock fragments	0.00
						Slope	0.84
174:							
Garrison	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.08	Slope	0.00
		Droughty	0.16			Hard to reclaim	0.00
						Rock fragments	0.00
175:							
Georgecreek	85	Fair		Fair		Fair	
		Low content of organic matter	0.88	Low strength	0.78	Slope	0.16
		Water erosion	0.90	Shrink-swell	0.98	Rock fragments	0.50
				Depth to bedrock	0.99		
176:							
Georgecreek	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Water erosion	0.90	Low strength	0.78	Rock fragments	0.50
				Shrink-swell	0.98		
				Depth to bedrock	0.99		
177:							
Georgecreek	85	Fair		Fair		Fair	
		Low content of organic matter	0.88	Low strength	0.78	Slope	0.16
		Water erosion	0.90	Shrink-swell	0.89	Rock fragments	0.50
				Depth to bedrock	0.92		

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
178:							
Georgecreek	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Water erosion	0.90	Low strength	0.78	Rock fragments	0.50
				Shrink-swell	0.89		
				Depth to bedrock	0.92		
179:							
Ginnis	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.50
		Depth to bedrock	0.54			Depth to bedrock	0.54
180:							
Ginnis	85	Fair		Poor		Poor	
		Droughty	0.35	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.65	Slope	0.00	Rock fragments	0.03
						Depth to bedrock	0.65
181:							
Ginnis	85	Fair		Poor		Poor	
		Droughty	0.04	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Depth to bedrock	0.54
						Rock fragments	0.88
182:							
Ginnis	50	Fair		Poor		Poor	
		Droughty	0.35	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.65	Slope	0.00	Rock fragments	0.03
						Depth to bedrock	0.65
Ginnis	40	Fair		Poor		Poor	
		Droughty	0.04	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Depth to bedrock	0.54
						Rock fragments	0.88
183:							
Ginnis	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.28
		Low content of organic matter	0.88			Depth to bedrock	0.54
Ginnis	35	Fair		Poor		Poor	
		Droughty	0.01	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.12
						Depth to bedrock	0.54
184:							
Ginnis	50	Fair		Poor		Poor	
		Droughty	0.35	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.65	Slope	0.82	Rock fragments	0.03
						Depth to bedrock	0.65
Conconully	30	Fair		Fair		Poor	
		Droughty	0.15	Slope	0.82	Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.00
						Hard to reclaim	0.80

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
185:							
Ginnis	50	Fair		Poor		Poor	
		Droughty	0.35	Slope	0.00	Slope	0.00
		Depth to bedrock	0.65	Depth to bedrock	0.00	Rock fragments	0.03
						Depth to bedrock	0.65
Conconully	30	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
						Hard to reclaim	0.01
						Rock fragments	0.72
186:							
Ginnis	70	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.50
		Depth to bedrock	0.54			Depth to bedrock	0.54
Rock outcrop	10	Not rated		Not rated		Not rated	
187:							
Glenrose	85	Fair		Fair		Fair	
		Low content of organic matter	0.88	Low strength	0.78	Slope	0.37
		Water erosion	0.90				
188:							
Glenrose	85	Fair		Fair		Poor	
		Low content of organic matter	0.88	Slope	0.08	Slope	0.00
		Water erosion	0.90	Low strength	0.78		
189:							
Goddard	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.37			Hard to reclaim	0.00
		No water erosion limitation	0.99			Slope	0.84
190:							
Goddard	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.37			Rock fragments	0.00
		No water erosion limitation	0.99			Hard to reclaim	0.00
191:							
Goddard	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.37			Rock fragments	0.00
		No water erosion limitation	0.99			Hard to reclaim	0.00
192:							
Goldlake	85	Fair		Good		Fair	
		Water erosion	0.90			Hard to reclaim	0.92

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
193:							
Gooseflats	55	Poor		Poor		Poor	
		Too alkaline	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Droughty	0.00	Depth to cemented pan	0.58	Sodium content	0.00
		Salinity	0.00			Salinity	0.00
		Sodium content	0.00			Too sandy	0.78
		Too sandy	0.78				
		Low content of organic matter	0.88				
Gooseflats	30	Poor		Poor		Poor	
		Too alkaline	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Salinity	0.00			Sodium content	0.00
		Sodium content	0.00			Salinity	0.00
		Droughty	0.00			Too sandy	0.94
		Low content of organic matter	0.12				
		Too sandy	0.94				
194:							
Growden	85	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Too acid	0.84	Stone content	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.30	Hard to reclaim	0.00
		Cobble content	0.92				
		Droughty	0.95				
195:							
Hadencreek	85	Fair		Poor		Fair	
		Water erosion	0.68	Low strength	0.00	Depth to saturated zone	0.14
		Carbonate content	0.68	Depth to saturated zone	0.14		
		Low content of organic matter	0.88	Shrink-swell	0.87		
196:							
Haley	85	Fair		Good		Good	
		Low content of organic matter	0.12				
		Water erosion	0.90				
		Droughty	0.99				
197:							
Haley	85	Fair		Good		Good	
		Low content of organic matter	0.12				
		Water erosion	0.90				
		Droughty	0.99				
198:							
Haley	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.82	Slope	0.00
		Water erosion	0.90				
		Droughty	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199:							
Hallcreek	85	Fair		Fair		Poor	
		Droughty	0.01	Cobble content	0.53	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Cobble content	0.92				
200:							
Haploxerolls	90	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
						Rock fragments	0.00
						Hard to reclaim	0.32
201:							
Hartill	80	Fair		Poor		Poor	
		Stone content	0.09	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.40	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Stone content	0.02	Depth to bedrock	0.99
		Depth to bedrock	0.99				
202:							
Hartill	80	Fair		Poor		Poor	
		Stone content	0.09	Slope	0.00	Slope	0.00
		Droughty	0.40	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Stone content	0.02	Depth to bedrock	0.99
		Depth to bedrock	0.99				
203:							
Hellgate	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
						Rock fragments	0.00
		Droughty	0.35			Slope	0.37
204:							
Hellgate	85	Fair		Good		Poor	
		Droughty	0.80			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.08
						Slope	0.96
205:							
Henneway	85	Fair		Fair		Fair	
		Low content of organic matter	0.88	Shrink-swell	0.99	Hard to reclaim	0.32
		No water erosion limitation	0.99			Slope	0.84
206:							
Henneway	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		No water erosion limitation	0.99	Shrink-swell	0.99	Hard to reclaim	0.32

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
207:							
Henneway	80	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		No water erosion limitation	0.99	Shrink-swell	0.97	Hard to reclaim	0.32
				Depth to bedrock	0.99	Rock fragments	0.50
208:							
Heytou	50	Fair		Poor		Poor	
		Droughty	0.01	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	Cobble content	0.71	Rock fragments	0.00
						Hard to reclaim	0.54
Stubblefield	40	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to cemented pan	0.21	Depth to cemented pan	0.00	Rock fragments	0.00
		Low content of organic matter	0.50			Depth to cemented pan	0.21
209:							
Histosols	90	Fair		Poor		Poor	
		No water erosion limitation	0.99	Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Content of organic matter	0.00
						Hard to reclaim	0.82
210:							
Hobohill	80	Fair		Poor		Poor	
		Droughty	0.04	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.08
211:							
Hobohill	85	Fair		Good		Poor	
		Droughty	0.06			Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.04
						Hard to reclaim	0.50
212:							
Hodgson	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.50	Depth to saturated zone	0.09	Depth to saturated zone	0.09
		No water erosion limitation	0.99	Shrink-swell	0.87		
213:							
Hodgson	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.50	Depth to saturated zone	0.09	Depth to saturated zone	0.09
		No water erosion limitation	0.99	Shrink-swell	0.87	Slope	0.84

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
214:							
Hodgson	80	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.50	Slope	0.08	Too clayey	0.00
		No water erosion limitation	0.99	Depth to saturated zone	0.09	Depth to saturated zone	0.09
				Shrink-swell	0.87		
215:							
Hodgson	80	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.00
		No water erosion limitation	0.99	Depth to saturated zone	0.09	Depth to saturated zone	0.09
				Shrink-swell	0.87		
216:							
Hudnut	85	Fair		Good		Poor	
		Droughty	0.82			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.82
						Slope	0.84
217:							
Hudnut	85	Fair		Poor		Poor	
		Droughty	0.82	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
						Hard to reclaim	0.82
218:							
Hunters	85	Fair		Poor		Good	
		Low content of organic matter	0.12	Low strength	0.00		
		Carbonate content	0.80				
		Water erosion	0.90				
219:							
Hunters	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Carbonate content	0.80	Low strength	0.00	Carbonate content	0.80
		Water erosion	0.90				
220:							
Inchelium	90	Fair		Fair		Fair	
		Water erosion	0.90	Depth to saturated zone	0.76	Depth to saturated zone	0.76
221:							
Inchelium	90	Fair		Fair		Fair	
		Water erosion	0.90	Depth to saturated zone	0.76	Depth to saturated zone	0.76
222:							
Inkler	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Cobble content	0.93	Rock fragments	0.00
						Hard to reclaim	0.00
						Slope	0.16

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
223:							
Inkler	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Cobble content	0.93	Rock fragments	0.00
						Hard to reclaim	0.00
224:							
Inkler	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Cobble content	0.93	Rock fragments	0.00
						Hard to reclaim	0.00
225:							
Inkler	40	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.82	Rock fragments	0.00
				Cobble content	0.93	Hard to reclaim	0.00
						Slope	0.00
Baldknob	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.82	Depth to bedrock	0.00
		Stone content	0.94	Stone content	0.94	Slope	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
226:							
Inkler	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Cobble content	0.93	Rock fragments	0.00
						Hard to reclaim	0.00
Baldknob	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.94	Stone content	0.94	Depth to bedrock	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
227:							
Inkler	65	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Cobble content	0.93	Rock fragments	0.00
						Hard to reclaim	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
228:							
Inkler	65	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Cobble content	0.93	Rock fragments	0.00
						Hard to reclaim	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
229:							
Jimcreek	85	Fair		Poor		Poor	
		Water erosion	0.90	Low strength	0.00	Depth to saturated zone	0.00
				Depth to saturated zone	0.00		
				Shrink-swell	0.83		

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
230:							
Johntom	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
				No cobble limitation	0.99	Depth to bedrock	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
Rubble land	10	Not rated		Not rated		Not rated	
231:							
Karamin	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.84
		Droughty	0.95				
232:							
Karamin	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.95				
233:							
Karamin	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.95				
234:							
Kartar	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.48			Hard to reclaim	0.88
235:							
Kellerbutte	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Water erosion	0.90	No cobble limitation	0.99	Hard to reclaim	0.00
						Rock fragments	0.00
236:							
Kellerbutte	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Water erosion	0.90	No cobble limitation	0.99	Hard to reclaim	0.00
						Rock fragments	0.00
237:							
Kenotrail	85	Fair		Poor		Poor	
		Depth to bedrock	0.71	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.73	Slope	0.00	Rock fragments	0.00
		No water erosion limitation	0.99	Shrink-swell	0.87	Depth to bedrock	0.71
238:							
Kewach	85	Fair		Poor		Fair	
		Too clayey	0.88	Low strength	0.00	Depth to saturated zone	0.07
		Low content of organic matter	0.88	Depth to saturated zone	0.07	Too clayey	0.63
		Water erosion	0.90	Shrink-swell	0.87		

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
239:							
Kewach	85	Fair		Poor		Fair	
		Too clayey	0.88	Low strength	0.00	Depth to saturated zone	0.07
		Low content of organic matter	0.88	Depth to saturated zone	0.07	Too clayey	0.63
		Water erosion	0.90	Shrink-swell	0.87	Slope	0.84
240:							
Kewach	85	Fair		Poor		Poor	
		Too clayey	0.88	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.88	Depth to saturated zone	0.07	Depth to saturated zone	0.07
		Water erosion	0.90	Slope	0.08	Too clayey	0.63
				Shrink-swell	0.87		
241:							
Kewach	85	Fair		Poor		Poor	
		Too clayey	0.88	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.07
		Water erosion	0.90	Depth to saturated zone	0.07	Too clayey	0.63
				Shrink-swell	0.87		
242:							
Kiehl	80	Fair		Good		Poor	
		Droughty	0.11			Hard to reclaim	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
243:							
Kiehl	80	Fair		Poor		Poor	
		Droughty	0.11	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.00
						Rock fragments	0.00
244:							
Kiehl	80	Fair		Poor		Poor	
		Droughty	0.11	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.00
						Rock fragments	0.00
245:							
Kiehl	80	Fair		Good		Poor	
		Droughty	0.10			Hard to reclaim	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
246:							
Kiehl	80	Fair		Poor		Poor	
		Droughty	0.10	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.00
						Rock fragments	0.00
247:							
Kiehl	80	Fair		Poor		Poor	
		Droughty	0.10	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.00
						Rock fragments	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
248:							
Koepke	85	Poor		Fair		Poor	
		Wind erosion	0.00	Slope	0.08	Slope	0.00
		No water erosion limitation	0.99			Hard to reclaim	0.82
249:							
Lakesol	90	Good		Poor		Poor	
				Slope	0.00	Slope	0.00
250:							
Lithic Xerorthents	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.02	Depth to bedrock	0.00
		Low content of organic matter	0.88	Stone content	0.98	Slope	0.00
		Stone content	0.98				
Baldknob	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.02	Depth to bedrock	0.00
		Stone content	0.94	Stone content	0.94	Slope	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
251:							
Lithic Xerorthents	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Stone content	0.98	Depth to bedrock	0.00
		Stone content	0.98				
Baldknob	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.94	Stone content	0.94	Depth to bedrock	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
252:							
Logy	85	Poor		Fair		Poor	
		Droughty	0.00	Cobble content	0.85	Hard to reclaim	0.00
		Low content of organic matter	0.50	Stone content	0.98	Rock fragments	0.00
						Slope	0.04
253:							
Loony	80	Fair		Fair		Fair	
		Droughty	0.24	Depth to saturated zone	0.80	Hard to reclaim	0.35
		Too acid	0.99			Depth to saturated zone	0.80
		No water erosion limitation	0.99				
254:							
Lostcreek	85	Fair		Good		Fair	
		Low content of organic matter	0.88			Rock fragments	0.88
						Slope	0.96
						Hard to reclaim	0.98

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
255:							
Louiecreek	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Cobble content	0.66	Hard to reclaim	0.00
		Cobble content	0.98			Rock fragments	0.00
		Droughty	0.99			Slope	0.37
256:							
Louploup	80	Fair		Good		Fair	
		Low content of organic matter	0.88			Rock fragments	0.12
		Water erosion	0.90			Slope	0.84
257:							
Louploup	80	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
		Water erosion	0.90			Rock fragments	0.12
258:							
Lynxcreek	85	Fair		Poor		Poor	
		Water erosion	0.90	Slope	0.00	Slope	0.00
				Low strength	0.00		
				Shrink-swell	0.87		
259:							
Malott	85	Poor		Fair		Fair	
		Too alkaline	0.00	Depth to cemented pan	0.58	Hard to reclaim	0.68
		Carbonate content	0.46			Rock fragments	0.88
		Water erosion	0.90				
260:							
Malott	85	Poor		Fair		Fair	
		Too alkaline	0.00	Depth to cemented pan	0.58	Hard to reclaim	0.68
		Carbonate content	0.46			Rock fragments	0.88
		Water erosion	0.90				
261:							
Malott	85	Poor		Fair		Poor	
		Too alkaline	0.00	Depth to cemented pan	0.58	Slope	0.00
		Carbonate content	0.46		0.82	Hard to reclaim	0.68
		Water erosion	0.90	Slope		Rock fragments	0.88
262:							
Malott	80	Poor		Fair		Fair	
		Too alkaline	0.00	Depth to cemented pan	0.82	Slope	0.04
		Carbonate content	0.46			Hard to reclaim	0.24
		Low content of organic matter	0.88			Rock fragments	0.28
263:							
Malott	80	Poor		Poor		Poor	
		Too alkaline	0.00	Slope	0.00	Slope	0.00
		Carbonate content	0.46	Depth to cemented pan	0.82	Hard to reclaim	0.24
		Low content of organic matter	0.88			Rock fragments	0.28

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
264:							
Malott	60	Poor		Fair		Fair	
		Too alkaline	0.00	Depth to cemented pan	0.82	Slope	0.04
		Carbonate content	0.46			Hard to reclaim	0.24
		Low content of organic matter	0.88			Rock fragments	0.28
Rock outcrop	20	Not rated		Not rated		Not rated	
265:							
Malott	60	Poor		Poor		Poor	
		Too alkaline	0.00	Slope	0.00	Slope	0.00
		Carbonate content	0.46	Depth to cemented pan	0.82	Hard to reclaim	0.24
		Low content of organic matter	0.88			Rock fragments	0.28
Rock outcrop	20	Not rated		Not rated		Not rated	
266:							
Malott	45	Poor		Poor		Poor	
		Too alkaline	0.00	Slope	0.00	Slope	0.00
		Carbonate content	0.46	Depth to cemented pan	0.82	Hard to reclaim	0.24
		Low content of organic matter	0.88			Rock fragments	0.28
Torriorthents	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Cobble content	0.98	Rock fragments	0.00
						Hard to reclaim	0.02
267:							
Manley	80	Poor		Good		Poor	
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.08			Hard to reclaim	0.00
		Droughty	0.53			Slope	0.16
268:							
Manley	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.08			Rock fragments	0.00
		Droughty	0.53			Hard to reclaim	0.00
269:							
Manley	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.08			Rock fragments	0.00
		Droughty	0.53			Hard to reclaim	0.00
270:							
Manley	55	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.08			Rock fragments	0.00
		Droughty	0.53			Hard to reclaim	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
270:							
Codylake	30	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		No water erosion limitation	0.99	Depth to bedrock	0.58	Rock fragments	0.88
		Droughty	0.99				
271:							
Manley	65	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.08			Rock fragments	0.00
		Droughty	0.53			Hard to reclaim	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
272:							
Manley	65	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.08			Rock fragments	0.00
		Droughty	0.53			Hard to reclaim	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
273:							
Martella	85	Fair		Poor		Fair	
		Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.44
		No water erosion limitation	0.99	Depth to saturated zone	0.44		
				Shrink-swell	0.97		
274:							
Martella	85	Fair		Poor		Fair	
		Low content of organic matter	0.88	Low strength	0.00	Depth to saturated zone	0.44
		No water erosion limitation	0.99	Depth to saturated zone	0.44		
				Shrink-swell	0.87		
275:							
Martella	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Low strength	0.00	Slope	0.00
		No water erosion limitation	0.99	Depth to saturated zone	0.44	Depth to saturated zone	0.44
				Slope	0.68		
				Shrink-swell	0.87		
276:							
Medisaprists	85	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Content of organic matter	0.00
277:							
Merkel	90	Poor		Good		Poor	
		Wind erosion	0.00			Rock fragments	0.00
		Droughty	0.03			Slope	0.16
		Low content of organic matter	0.50			Hard to reclaim	0.46

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
278:							
Merkel	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.03			Rock fragments	0.00
		Low content of organic matter	0.50			Hard to reclaim	0.46
279:							
Merkel	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.03			Rock fragments	0.00
		Low content of organic matter	0.50			Hard to reclaim	0.46
280:							
Merkel	85	Poor		Fair		Fair	
		Wind erosion	0.00	Cobble content	0.59	Hard to reclaim	0.01
		Droughty	0.00			Rock fragments	0.12
		Low content of organic matter	0.50			Slope	0.16
281:							
Merkel	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Cobble content	0.59	Hard to reclaim	0.01
		Low content of organic matter	0.50			Rock fragments	0.12
282:							
Mineral	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Stone content	0.92	Depth to bedrock	0.54
		Stone content	0.92	No cobble limitation	0.99		
283:							
Mineral	80	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Stone content	0.92	Depth to bedrock	0.54
		Stone content	0.92	No cobble limitation	0.99		
284:							
Mineral	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Stone content	0.92	Slope	0.16
		Low content of organic matter	0.88	No cobble limitation	0.99	Depth to bedrock	0.54
		Stone content	0.92				
Rock outcrop	20	Not rated		Not rated		Not rated	
285:							
Mineral	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Stone content	0.92	Depth to bedrock	0.54
		Stone content	0.92	No cobble limitation	0.99		

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
285:							
Rock outcrop	20	Not rated		Not rated		Not rated	
286:							
Mineral	60	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Stone content	0.92	Depth to bedrock	0.54
		Stone content	0.92	No cobble limitation	0.99		
Rock outcrop	20	Not rated		Not rated		Not rated	
287:							
Mineral	60	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
288:							
Mitchellpoint	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Water erosion	0.68			Rock fragments	0.00
289:							
Monse	85	Fair		Poor		Fair	
		Water erosion	0.68	Low strength	0.00	Depth to saturated zone	0.18
		Low content of organic matter	0.88	Depth to saturated zone	0.18		
				Shrink-swell	0.95		
290:							
Morical	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.20	Slope	0.68	Depth to bedrock	0.54
		Depth to bedrock	0.54				
		No water erosion limitation	0.99				
291:							
Morical	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.20	Depth to bedrock	0.00	Depth to bedrock	0.54
		Depth to bedrock	0.54				
		No water erosion limitation	0.99				
292:							
Morical	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Slope	0.68	Depth to bedrock	0.79
		No water erosion limitation	0.99	Shrink-swell	0.98		
		Droughty	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
293:							
Moscow	80	Fair		Poor		Poor	
		Depth to bedrock	0.84	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.88	Slope	0.00	Rock fragments	0.00
		Droughty	0.88			Depth to bedrock	0.84
		Too acid	0.97				
		No water erosion limitation	0.99				
294:							
Moscow	80	Fair		Poor		Poor	
		Depth to bedrock	0.54	Slope	0.00	Slope	0.00
		Droughty	0.63	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.54
		Too acid	0.97				
		No water erosion limitation	0.99				
295:							
Moses	80	Fair		Poor		Poor	
		Droughty	0.28	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.84			Slope	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.84
		Too acid	0.97				
296:							
Moses	80	Fair		Poor		Poor	
		Droughty	0.28	Slope	0.00	Slope	0.00
		Depth to bedrock	0.84	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.84
		Too acid	0.97				
297:							
Moses	80	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Stone content	0.06	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Stone content	0.05	Depth to bedrock	0.54
				Cobble content	0.95		
298:							
Moses	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Stone content	0.06	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Stone content	0.05	Depth to bedrock	0.54
				Cobble content	0.95		
299:							
Narcisse	85	Fair		Fair		Fair	
		Water erosion	0.90	Depth to saturated zone	0.99	Hard to reclaim	0.95
						Rock fragments	0.97
						Depth to saturated zone	0.99

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
300:							
Narcisse	85	Fair		Fair		Fair	
		Water erosion	0.90	Depth to saturated zone	0.99	Hard to reclaim	0.95
						Rock fragments	0.97
						Depth to saturated zone	0.99
301:							
Nespelem	90	Fair		Poor		Fair	
		Depth to cemented pan	0.07	Depth to cemented pan	0.00	Depth to cemented pan	0.07
		Droughty	0.49				
		Water erosion	0.90				
302:							
Nespelem	50	Fair		Poor		Poor	
		Depth to cemented pan	0.54	Depth to cemented pan	0.00	Slope	0.00
		Water erosion	0.90	Slope	0.82	Depth to cemented pan	0.54
Nespelem	40	Fair		Poor		Poor	
		Low content of organic matter	0.50	Depth to cemented pan	0.00	Slope	0.00
		Water erosion	0.90	Slope	0.82	Depth to cemented pan	0.94
		Depth to cemented pan	0.94				
303:							
Nespelem	55	Fair		Poor		Fair	
		Depth to cemented pan	0.07	Depth to cemented pan	0.00	Depth to cemented pan	0.07
		Droughty	0.49				
		Water erosion	0.90				
Emdent	30	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Sodium content	0.00			Sodium content	0.22
		Too alkaline	0.00				
		Low content of organic matter	0.12				
		Water erosion	0.68				
304:							
Nespelem	75	Fair		Poor		Fair	
		Depth to cemented pan	0.07	Depth to cemented pan	0.00	Depth to cemented pan	0.07
		Droughty	0.49			Slope	0.16
		Water erosion	0.90				
Typic Xerorthents	20	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Slope	0.16
		Water erosion	0.37			Salinity	0.88
305:							
Neuske	85	Fair		Fair		Fair	
		Water erosion	0.90	Low strength	0.78	Slope	0.84
				Shrink-swell	0.87	Hard to reclaim	0.88

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
306:							
Neuske	85	Fair		Poor		Poor	
		Water erosion	0.90	Slope	0.00	Slope	0.00
				Low strength	0.78	Hard to reclaim	0.88
				Shrink-swell	0.87		
307:							
Nevine	45	Poor		Good		Poor	
		Wind erosion	0.00			Rock fragments	0.00
		Droughty	0.43			Slope	0.16
		Low content of organic matter	0.88			Hard to reclaim	0.35
		Water erosion	0.90				
Nevine	40	Poor		Good		Poor	
		Wind erosion	0.00			Rock fragments	0.00
		Droughty	0.15			Hard to reclaim	0.16
		Low content of organic matter	0.88			Slope	0.16
		Water erosion	0.90				
		No stoniness limitation	0.99				
308:							
Nevine	45	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.43			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.35
		Water erosion	0.90				
Nevine	40	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.15			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.16
		Water erosion	0.90				
		No stoniness limitation	0.99				
309:							
Nevine	45	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.43			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.35
		Water erosion	0.90				
Nevine	40	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.15			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.16
		Water erosion	0.90				
		No stoniness limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
310:							
Nevine	30	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.43			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.35
		Water erosion	0.90				
Nevine	30	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.15			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.16
		Water erosion	0.90				
		No stoniness limitation	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
311:							
Nevine	30	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.43			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.35
		Water erosion	0.90				
Nevine	30	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.15			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim	0.16
		Water erosion	0.90				
		No stoniness limitation	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
312:							
Newbell	80	Fair		Good		Fair	
		Droughty	0.04			Hard to reclaim	0.01
						Slope	0.16
313:							
Newbell	85	Fair		Poor		Poor	
		Droughty	0.04	Slope	0.00	Slope	0.00
						Hard to reclaim	0.01
314:							
Newbell	80	Fair		Poor		Poor	
		Droughty	0.04	Slope	0.00	Slope	0.00
						Hard to reclaim	0.01
315:							
Northstar	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Slope	0.82	Slope	0.00
		Too acid	0.95	No cobble limitation	0.99	Depth to bedrock	0.54

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
316:							
Northstar	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.95	No cobble limitation	0.99	Depth to bedrock	0.54
317:							
Northstar	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Slope	0.68	Slope	0.00
		Too acid	0.95	Cobble content	0.72	Depth to bedrock	0.54
Johntom	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.68	Depth to bedrock	0.00
				No cobble limitation	0.99	Slope	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
318:							
Northstar	50	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.95	Cobble content	0.72	Depth to bedrock	0.54
Johntom	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
				No cobble limitation	0.99	Depth to bedrock	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
319:							
Northstar	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Too acid	0.95	Cobble content	0.72	Depth to bedrock	0.54
Louiecreek	30	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Cobble content	0.98	Cobble content	0.66	Hard to reclaim	0.00
		Droughty	0.99			Rock fragments	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
320:							
Northstar	40	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.95	Cobble content	0.72	Depth to bedrock	0.54
Louiecreek	30	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Cobble content	0.98	Cobble content	0.66	Hard to reclaim	0.00
		Droughty	0.99			Rock fragments	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
320:							
Rock outcrop	15	Not rated		Not rated		Not rated	
321:							
Northstar	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.72	Slope	0.00
		Too acid	0.95	Slope	0.82	Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
322:							
Ohscow	80	Fair		Poor		Poor	
		Droughty	0.75	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	Cobble content	0.95	Hard to reclaim	0.00
		Water erosion	0.90			Rock fragments	0.00
323:							
Ohscow	80	Fair		Poor		Poor	
		Droughty	0.75	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	Cobble content	0.95	Hard to reclaim	0.00
		Water erosion	0.90			Rock fragments	0.00
324:							
Ohscow	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.80	Cobble content	0.96	Hard to reclaim	0.00
		Water erosion	0.90			Rock fragments	0.00
325:							
Ohscow	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.80	Cobble content	0.96	Hard to reclaim	0.00
		Water erosion	0.90			Rock fragments	0.00
326:							
Okanogan	85	Fair		Good		Good	
		Water erosion	0.68				
327:							
Omak	90	Fair		Poor		Fair	
		Water erosion	0.90	Depth to cemented pan	0.00	Depth to saturated zone	0.04
		Depth to cemented pan	0.99	Depth to saturated zone	0.04	Depth to cemented pan	0.99
328:							
Owhi	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Droughty	0.35			Rock fragments	0.00
		Water erosion	0.90				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
329:							
Owhi	85	Fair		Fair		Poor	
		Droughty	0.04	Slope	0.92	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Slope	0.00
330:							
Owhi	45	Poor		Good		Poor	
		Droughty	0.00			Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Slope	0.16
		Too acid	0.99				
		No water erosion limitation	0.99				
Haley	35	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.16
		Water erosion	0.90				
		Droughty	0.92				
331:							
Oxerine	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Cobble content	0.93	Slope	0.16
		Depth to bedrock	0.54			Depth to bedrock	0.54
332:							
Oxerine	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.50	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.93	Depth to bedrock	0.54
333:							
Oxerine	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.93	Depth to bedrock	0.54
334:							
Oxerine	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Slope	0.82	Slope	0.00
		Depth to bedrock	0.54	Cobble content	0.93	Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
335:							
Oxerine	65	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.93	Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
336:							
Parmenter	85	Poor		Fair		Poor	
		Wind erosion	0.00	Stone content	0.16	Hard to reclaim	0.00
		Stone content	0.01	Cobble content	0.23	Rock fragments	0.00
		Droughty	0.57				
		Cobble content	0.86				
		Low content of organic matter	0.88				
		No water erosion limitation	0.99				
337:							
Parmenter	85	Poor		Fair		Poor	
		Wind erosion	0.00	Stone content	0.16	Hard to reclaim	0.00
		Stone content	0.01	Cobble content	0.23	Rock fragments	0.00
		Droughty	0.57			Slope	0.04
		Cobble content	0.86				
		Low content of organic matter	0.88				
		No water erosion limitation	0.99				
338:							
Parmenter	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Stone content	0.01	Stone content	0.16	Hard to reclaim	0.00
		Droughty	0.57	Cobble content	0.23	Rock fragments	0.00
		Cobble content	0.86				
		Low content of organic matter	0.88				
		No water erosion limitation	0.99				
339:							
Parmenter	85	Poor		Poor		Poor	
		Wind erosion	0.00	Stone content	0.00	Hard to reclaim	0.00
		Stone content	0.00	Cobble content	0.20	Rock fragments	0.00
		Droughty	0.44			Slope	0.04
		Low content of organic matter	0.88				
		Cobble content	0.89				
		No water erosion limitation	0.99				
340:							
Peshastin	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Cobble content	0.86	Hard to reclaim	0.00
		Carbonate content	0.68			Rock fragments	0.00
		Droughty	0.87			Carbonate content	0.68
		No water erosion limitation	0.99				
341:							
Peshastin	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.50	Hard to reclaim	0.00
		Carbonate content	0.68	Cobble content	0.86	Rock fragments	0.00
		Droughty	0.87			Slope	0.00
		No water erosion limitation	0.99			Carbonate content	0.68

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
342:							
Peshastin	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Carbonate content	0.68	Cobble content	0.48	Hard to reclaim	0.00
		Stone content	0.78	Stone content	0.50	Rock fragments	0.00
		Droughty	0.89			Carbonate content	0.68
		Cobble content	0.99				
343:							
Phoebe	85	Good		Good		Good	
344:							
Phoebe	85	Good		Good		Good	
345:							
Phoebe	80	Good		Fair		Poor	
				Slope	0.82	Slope	0.00
346:							
Phoebe	85	Good		Poor		Poor	
				Slope	0.00	Slope	0.00
347:							
Phoebe	85	Fair		Good		Good	
		Low content of organic matter	0.12				
348:							
Phoebe	85	Fair		Good		Good	
		Low content of organic matter	0.12				
349:							
Phoebe	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.82	Slope	0.00
350:							
Phoebe	55	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.68	Slope	0.00
Dehart	25	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.68	Hard to reclaim	0.00
		Droughty	0.80			Rock fragments	0.00
						Slope	0.00
351:							
Picard	85	Fair		Good		Good	
		Water erosion	0.90				
352:							
Picard	85	Fair		Fair		Poor	
		Water erosion	0.90	Slope	0.68	Slope	0.00
353:							
Pits	100	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
354:							
Pogue	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.19			Hard to reclaim	0.00
355:							
Pogue	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.19			Hard to reclaim	0.00
356:							
Pogue	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.82	Rock fragments	0.00
		Droughty	0.19			Hard to reclaim	0.00
						Slope	0.00
357:							
Pogue	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Droughty	0.42			Rock fragments	0.12
358:							
Pogue	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Cobble content	0.98	Rock fragments	0.00
		Droughty	0.14			Hard to reclaim	0.00
						Slope	0.16
359:							
Pogue	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.14	Cobble content	0.98	Rock fragments	0.00
						Hard to reclaim	0.00
360:							
Poween	85	Fair		Good		Good	
		Water erosion	0.90				
361:							
Quincy	90	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.09			Too sandy	0.50
		Low content of organic matter	0.12				
		Too sandy	0.50				
362:							
Quincy	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.09			Too sandy	0.50
		Low content of organic matter	0.12				
		Too sandy	0.50				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
363:							
Quincy	85	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.78
		Low content of organic matter	0.12				
		Droughty	0.43				
		Too sandy	0.78				
364:							
Quincy	85	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.78
		Low content of organic matter	0.12				
		Droughty	0.31				
		Too sandy	0.78				
365:							
Quincy	85	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.78
		Low content of organic matter	0.12				
		Droughty	0.29				
		Too sandy	0.78				
366:							
Quincy	85	Poor		Fair		Poor	
		Wind erosion	0.00	Slope	0.82	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.78
		Droughty	0.31				
		Too sandy	0.78				
367:							
Quincy	55	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.50
		Low content of organic matter	0.12			Slope	0.96
		Droughty	0.25				
		Too sandy	0.50				
Aeneas	35	Fair		Good		Good	
		Low content of organic matter	0.12				
		Droughty	0.98				
368:							
Raisio	85	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Stone content	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Depth to bedrock	0.00	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.52		
		No cobble limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
369:							
Raisio	60	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.16
		Low content of organic matter	0.50	Cobble content	0.52	Depth to bedrock	0.54
		Depth to bedrock	0.54				
		No cobble limitation	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
370:							
Raisio	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Low content of organic matter	0.50	Slope	0.68	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.85		
Rufus	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Stone content	0.33	Rock fragments	0.00
		Stone content	0.33	Slope	0.68	Slope	0.00
371:							
Raisio	45	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Stone content	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Stone content	0.00	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.85		
Rufus	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.33	Stone content	0.33	Rock fragments	0.00
372:							
Raisio	60	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Stone content	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Depth to bedrock	0.00	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.52		
		No cobble limitation	0.99				
Rufus	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.94	Stone content	0.94	Depth to bedrock	0.00
				No cobble limitation	0.99		

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
373:							
Raisio	40	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00	Stone content	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Depth to bedrock	0.00	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.52		
		No cobble limitation	0.99				
Rufus	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.00	Stone content	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88				
Rock outcrop	15	Not rated		Not rated		Not rated	
374:							
Raisio	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Stone content	0.02	Stone content	0.02	Slope	0.00
		Low content of organic matter	0.50	Slope	0.68	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.95		
Rufus	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.68	Rock fragments	0.00
		Stone content	0.98	Stone content	0.98	Slope	0.00
375:							
Raisio	45	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Stone content	0.02	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Stone content	0.02	Depth to bedrock	0.54
		Depth to bedrock	0.54	Cobble content	0.95		
Rufus	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.98	Stone content	0.98	Rock fragments	0.00
376:							
Ralsen	85	Fair		Poor		Poor	
		Water erosion	0.90	Depth to saturated zone	0.00	Depth to saturated zone	0.00
377:							
Ratlake	90	Poor		Poor		Poor	
		Too alkaline	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Droughty	0.00	Depth to cemented pan	0.00	Sodium content	0.00
		Salinity	0.00	Low strength	0.00	Salinity	0.00
		Sodium content	0.00	Shrink-swell	0.87	Depth to cemented pan	0.00
		Depth to cemented pan	0.00				
		Water erosion	0.68				
		Low content of organic matter	0.88				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
378:							
Reardan	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.43		
		Water erosion	0.90				
379:							
Reardan	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.88	Shrink-swell	0.43	Slope	0.37
		Water erosion	0.90				
380:							
Rebecca	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.50
381:							
Rebecca	85	Fair		Good		Poor	
		Low content of organic matter	0.88			Rock fragments	0.00
		Droughty	0.99			Hard to reclaim	0.50
						Slope	0.96
382:							
Renha	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Slope	0.16
		Water erosion	0.68	Shrink-swell	0.32	Depth to bedrock	0.54
		Droughty	0.84			Rock fragments	0.72
		Low content of organic matter	0.88				
		Too acid	0.99				
383:							
Renha	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Too clayey	0.00
		Water erosion	0.68	Slope	0.00	Depth to bedrock	0.54
		Droughty	0.84	Shrink-swell	0.32	Rock fragments	0.72
		Low content of organic matter	0.88				
		Too acid	0.99				
384:							
Renha	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Too clayey	0.00
		Water erosion	0.68	Slope	0.00	Depth to bedrock	0.54
		Droughty	0.84	Shrink-swell	0.32	Rock fragments	0.72
		Low content of organic matter	0.88				
		Too acid	0.99				
Oxerine	40	Fair		Poor		Poor	
		Droughty	0.11	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Water erosion	0.68			Depth to bedrock	0.54
		Low content of organic matter	0.88				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
385:							
Republic	85	Fair		Good		Fair	
		Low content of organic matter	0.88			Rock fragments	0.03
						Hard to reclaim	0.08
						Slope	0.96
386:							
Republic	85	Fair		Fair		Poor	
		Low content of organic matter	0.88	Slope	0.08	Slope	0.00
						Rock fragments	0.03
						Hard to reclaim	0.08
387:							
Republic	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Slope	0.00	Slope	0.00
						Rock fragments	0.03
						Hard to reclaim	0.08
388:							
Resner	85	Poor		Good		Poor	
		Wind erosion	0.00			Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.00
		Droughty	0.79			Slope	0.84
		Water erosion	0.90				
389:							
Resner	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
						Rock fragments	0.00
		Droughty	0.79			Hard to reclaim	0.00
		Water erosion	0.90				
390:							
Ret	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Water erosion	0.90				
391:							
Riverwash	100	Not rated		Not rated		Not rated	
392:							
Rock outcrop	100	Not rated		Not rated		Not rated	
393:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Chumstick	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.36	Stone content	0.36	Depth to bedrock	0.00
		Low content of organic matter	0.88	Cobble content	0.81		
		Too acid	0.95				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
394:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Chumstick	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.36	Stone content	0.36	Depth to bedrock	0.00
		Low content of organic matter	0.88	Cobble content	0.81		
		Too acid	0.95				
395:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Mineral	30	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Stone content	0.92	Depth to bedrock	0.54
		Stone content	0.92	No cobble limitation	0.99		
396:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Rufus	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.00	Stone content	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88				
397:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Soaplake	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.82	Slope	0.00
		Water erosion	0.68				
398:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Swakane	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.82	Depth to bedrock	0.00
		Stone content	0.84	Stone content	0.84	Slope	0.00
				Cobble content	0.98		
399:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Vanbrunt	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.23	Depth to bedrock	0.54
		Too acid	0.95				
		Cobble content	0.97				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
400:							
Roosevelt	45	Fair		Poor		Poor	
		Droughty	0.11	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Slope	0.82	Slope	0.00
						Depth to bedrock	0.54
Soaplake	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.82	Slope	0.00
		Water erosion	0.68				
Rock outcrop	15	Not rated		Not rated		Not rated	
401:							
Roosevelt	40	Fair		Poor		Poor	
		Droughty	0.11	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
Soaplake	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Water erosion	0.68				
Rock outcrop	15	Not rated		Not rated		Not rated	
402:							
Rubble land	100	Not rated		Not rated		Not rated	
403:							
Rubble land	60	Not rated		Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated		Not rated	
404:							
Rubble land	40	Not rated		Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated		Not rated	
Haploxerolls	20	Poor		Poor		Poor	
		Stone content	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Stone content	0.00	Depth to bedrock	0.00
		Cobble content	0.59	Cobble content	0.00		
405:							
Sacheen	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.94
		Droughty	0.14				
		Too sandy	0.94				
406:							
Sacheen	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.94
		Droughty	0.14				
		Too sandy	0.94				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
407:							
Sacheen	85	Poor		Good		Fair	
		Wind erosion	0.00			Rock fragments	0.12
		Droughty	0.12			Slope	0.84
		Low content of organic matter	0.12				
408:							
Sanpoil	80	Fair		Poor		Poor	
		Low content of organic matter	0.88	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		No water erosion limitation	0.99			Hard to reclaim	0.68
						Rock fragments	0.97
409:							
Sanpoil	80	Fair		Poor		Poor	
		No water erosion limitation	0.99	Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Hard to reclaim	0.68
						Rock fragments	0.97
410:							
Scala	85	Fair		Good		Good	
		Low content of organic matter	0.12				
		Water erosion	0.68				
411:							
Sclome	80	Fair		Fair		Fair	
		Too clayey	0.76	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Water erosion	0.90	Shrink-swell	0.84	Too clayey	0.76
412:							
Scoap	80	Fair		Fair		Poor	
		No cobble limitation	0.99	Cobble content	0.41	Rock fragments	0.00
		No water erosion limitation	0.99			Hard to reclaim	0.00
						Slope	0.16
413:							
Scoap	80	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
		Stone content	0.82	Cobble content	0.90	Hard to reclaim	0.00
						Rock fragments	0.00
414:							
Scoap	80	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
		Stone content	0.82	No cobble limitation	0.99	Hard to reclaim	0.00
						Rock fragments	0.00
415:							
Scoap	60	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
		Stone content	0.82	Cobble content	0.90	Hard to reclaim	0.00
						Rock fragments	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
416:							
Scoap	60	Fair		Poor		Poor	
		Low content of organic matter	0.50	Slope	0.00	Slope	0.00
		Stone content	0.82	Cobble content	0.90	Hard to reclaim	0.00
						Rock fragments	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
417:							
Scrabblers	80	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.03
		Droughty	0.58			Slope	0.84
		No water erosion limitation	0.99			Hard to reclaim	0.95
418:							
Scrabblers	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.58			Rock fragments	0.03
		No water erosion limitation	0.99			Hard to reclaim	0.95
419:							
Scrabblers	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.03
		Droughty	0.62			Slope	0.84
		Water erosion	0.90			Hard to reclaim	0.95
420:							
Scrabblers	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.62			Rock fragments	0.03
		Water erosion	0.90			Hard to reclaim	0.95
421:							
Sitdown	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Droughty	0.02	Cobble content	0.98	Rock fragments	0.00
		Low content of organic matter	0.50			Hard to reclaim	0.00
422:							
Skaha	85	Poor		Good		Poor	
		Wind erosion	0.00			Hard to reclaim	0.00
		Droughty	0.00			Rock fragments	0.00
		Low content of organic matter	0.12				
423:							
Skaha	85	Poor		Good		Poor	
		Wind erosion	0.00			Hard to reclaim	0.00
		Droughty	0.00			Rock fragments	0.00
		Low content of organic matter	0.12				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
424:							
Skaha	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
						Rock fragments	0.00
425:							
Skaha	85	Poor		Fair		Poor	
		Droughty	0.00	Cobble content	0.27	Hard to reclaim	0.00
		Low content of organic matter	0.12	Slope	0.82	Rock fragments	0.00
		Cobble content	0.94			Slope	0.00
426:							
Skaha	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.27	Hard to reclaim	0.00
		Cobble content	0.94			Rock fragments	0.00
427:							
Skaha	60	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.27	Hard to reclaim	0.00
		Cobble content	0.94			Rock fragments	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
428:							
Skanid	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
						Slope	0.16
429:							
Skanid	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
						Rock fragments	0.00
430:							
Skanid	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
						Rock fragments	0.00
431:							
Skanid	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.16
432:							
Skanid	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
433:							
Skanid	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.00
434:							
Skanid	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
						Rock fragments	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
435:							
Skanid	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
						Rock fragments	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
436:							
Skanid	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
437:							
Spens	90	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.55	Hard to reclaim	0.00
		Cobble content	0.97			Rock fragments	0.00
438:							
Spens	90	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.55	Hard to reclaim	0.00
		Cobble content	0.97			Rock fragments	0.00
439:							
Spokane	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Slope	0.16
						Depth to bedrock	0.54
440:							
Spokane	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.54

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
441:							
Spokane	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
442:							
Spokane	85	Fair		Poor		Poor	
		Droughty	0.07	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.79
443:							
Spokane	85	Fair		Poor		Poor	
		Droughty	0.07	Slope	0.00	Slope	0.00
		Depth to bedrock	0.79	Depth to bedrock	0.00	Rock fragments	0.00
						Depth to bedrock	0.79
444:							
Spokane	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Slope	0.16
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
445:							
Spokane	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
446:							
Spokane	60	Fair		Poor		Poor	
		Droughty	0.07	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.79			Slope	0.16
						Depth to bedrock	0.79
Skanid	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.16
447:							
Spokane	60	Fair		Poor		Poor	
		Droughty	0.07	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.79	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.79
Skanid	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
448:							
Spokane	60	Fair		Poor		Poor	
		Droughty	0.07	Slope	0.00	Slope	0.00
		Depth to bedrock	0.79	Depth to bedrock	0.00	Rock fragments	0.00
						Depth to bedrock	0.79
Skanid	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Depth to bedrock	0.00
449:							
Springdale	80	Poor		Fair		Poor	
		Droughty	0.00	Cobble content	0.89	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
450:							
Springdale	80	Poor		Fair		Poor	
		Droughty	0.00	Slope	0.08	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.89	Hard to reclaim	0.00
						Rock fragments	0.00
451:							
Springdale	80	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.89	Hard to reclaim	0.00
						Rock fragments	0.00
452:							
Stapaloop	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.84
453:							
Stapaloop	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
454:							
Stapaloop	80	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.50
						Slope	0.84
455:							
Stepstone	85	Poor		Fair		Poor	
		Wind erosion	0.00	Stone content	0.48	Rock fragments	0.00
		Stone content	0.00			Hard to reclaim	0.00
		Low content of organic matter	0.12			Slope	0.16
		Droughty	0.98				
		No water erosion limitation	0.99				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
456:							
Stepstone	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Stone content	0.00	Stone content	0.48	Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Droughty	0.98				
		No water erosion limitation	0.99				
457:							
Stepstone	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Stone content	0.00	Stone content	0.48	Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Droughty	0.98				
		No water erosion limitation	0.99				
458:							
Stepstone	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.94	Hard to reclaim	0.00
		Stone content	0.67	Stone content	0.98	Rock fragments	0.00
459:							
Stevens	85	Fair		Good		Fair	
		No water erosion limitation	0.99			Hard to reclaim	0.99
460:							
Stevens	85	Fair		Good		Fair	
		No water erosion limitation	0.99			Slope	0.37
						Hard to reclaim	0.99
461:							
Stevens	85	Fair		Fair		Poor	
		No water erosion limitation	0.99	Slope	0.08	Slope	0.00
						Hard to reclaim	0.99
462:							
Stevens	85	Fair		Poor		Poor	
		Droughty	0.80	Slope	0.00	Slope	0.00
						Rock fragments	0.00
						Hard to reclaim	0.65
463:							
Strat	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	No cobble limitation	0.99	Hard to reclaim	0.00
						Rock fragments	0.00
		Droughty	0.13				
		Stone content	0.98				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
464:							
Stubblefield	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to cemented pan	0.00	Rock fragments	0.00
		Depth to cemented pan	0.21	Stone content	0.90	Slope	0.04
		Low content of organic matter	0.50	No cobble limitation	0.99	Depth to cemented pan	0.21
		Stone content	0.88				
465:							
Swakane	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
						Rock fragments	0.12
466:							
Swakane	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.82	Depth to bedrock	0.00
		Stone content	0.84	Stone content	0.84	Slope	0.00
				Cobble content	0.98		
Rock outcrop	30	Not rated		Not rated		Not rated	
467:							
Swakane	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.84	Stone content	0.84	Depth to bedrock	0.00
				Cobble content	0.98		
Rock outcrop	35	Not rated		Not rated		Not rated	
468:							
Swipkin	85	Fair		Good		Good	
		Water erosion	0.68				
		Low content of organic matter	0.88				
469:							
Swipkin	80	Fair		Good		Good	
		Water erosion	0.68				
		Low content of organic matter	0.88				
470:							
Thout	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
471:							
Thout	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Slope	0.04
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
472:							
Thout	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
473:							
Thout	60	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
						Depth to bedrock	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
474:							
Timentwa	85	Poor		Fair		Fair	
		Wind erosion	0.00	Depth to cemented pan	0.95	Rock fragments	0.12
		Water erosion	0.90			Hard to reclaim	0.88
		Carbonate content	0.97				
475:							
Timentwa	85	Poor		Fair		Fair	
		Wind erosion	0.00	Depth to cemented pan	0.95	Rock fragments	0.12
		Water erosion	0.90			Slope	0.37
		Carbonate content	0.97			Hard to reclaim	0.88
476:							
Timentwa	85	Fair		Fair		Poor	
		Carbonate content	0.80	Depth to cemented pan	0.95	Rock fragments	0.00
						Hard to reclaim	0.02
				Stone content	0.99	Slope	0.16
477:							
Timentwa	50	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Water erosion	0.90	Depth to cemented pan	0.95	Rock fragments	0.12
		Carbonate content	0.97			Hard to reclaim	0.92
Timentwa	35	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Water erosion	0.90	Depth to cemented pan	0.58	Rock fragments	0.97
		Carbonate content	0.97				
478:							
Timentwa	50	Fair		Poor		Poor	
		Carbonate content	0.80	Slope	0.00	Slope	0.00
				Depth to cemented pan	0.95	Rock fragments	0.00
						Hard to reclaim	0.02
Timentwa	35	Fair		Poor		Poor	
		Carbonate content	0.80	Slope	0.00	Slope	0.00
				Depth to cemented pan	0.58	Hard to reclaim	0.02
						Rock fragments	0.12

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
479:							
Timentwa	50	Poor		Fair		Fair	
		Wind erosion	0.00	Depth to cemented pan	0.95	Rock fragments	0.12
		Water erosion	0.90			Slope	0.16
		Carbonate content	0.97			Hard to reclaim	0.92
Bakeoven	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Cobble content	0.03	Depth to bedrock	0.00
		Cobble content	0.00	Slope	0.98	Slope	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
480:							
Togo	80	Poor		Fair		Poor	
		Wind erosion	0.00	Cobble content	0.80	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.95			Slope	0.16
		Cobble content	0.99				
481:							
Togo	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.80	Hard to reclaim	0.00
		Too acid	0.95			Rock fragments	0.00
		Cobble content	0.99				
482:							
Togo	80	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.80	Hard to reclaim	0.00
		Too acid	0.95			Rock fragments	0.00
		Cobble content	0.99				
483:							
Togo	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Cobble content	0.86	Hard to reclaim	0.00
		Too acid	0.95			Rock fragments	0.00
		No cobble limitation	0.99				
484:							
Togo	65	Fair		Fair		Poor	
		Low content of organic matter	0.12	Cobble content	0.31	Hard to reclaim	0.00
		Cobble content	0.89	Slope	0.82	Rock fragments	0.00
		Droughty	0.90	Stone content	0.92	Slope	0.00
		Too acid	0.95				
		Stone content	0.97				
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
485:							
Torboy	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.46			Hard to reclaim	0.02
						Slope	0.84
486:							
Torboy	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.46			Rock fragments	0.00
						Hard to reclaim	0.02
487:							
Torrifluventic Haploxerolls	85	Poor		Fair		Poor	
		Wind erosion	0.00	No cobble limitation	0.99	Rock fragments	0.00
		Droughty	0.77			Hard to reclaim	0.12
		Low content of organic matter	0.88				
488:							
Tunkcreek	85	Poor		Good		Fair	
		Wind erosion	0.00			Slope	0.16
		Low content of organic matter	0.12			Too sandy	0.22
		Too sandy	0.22				
		Droughty	0.92				
		Too acid	0.95				
489:							
Tunkcreek	85	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.22
		Too sandy	0.22				
		Droughty	0.92				
		Too acid	0.95				
490:							
Tyee	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Slope	0.82	Rock fragments	0.00
		Depth to bedrock	0.00			Slope	0.00
491:							
Tyee	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
492:							
Tyee	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
493:							
Tyee	30	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
493:							
Morical	30	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.79	Depth to bedrock	0.00	Depth to bedrock	0.79
		No water erosion limitation	0.99	Shrink-swell	0.98		
		Droughty	0.99				
Tyee	25	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
494:							
Tyee	65	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Slope	0.68	Rock fragments	0.00
		Depth to bedrock	0.00			Slope	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
495:							
Tyee	60	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	
496:							
Typic Haplaquolls	80	Fair		Poor		Poor	
		Low content of organic matter	0.50	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		No water erosion limitation	0.99			Rock fragments	0.00
						Hard to reclaim	0.50
497:							
Typic Xerorthents	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Rock fragments	0.00
				Shrink-swell	0.87	Slope	0.00
						Hard to reclaim	0.68
Typic Xerochrepts	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Rock fragments	0.00
		No water erosion limitation	0.99	Low strength	0.00	Slope	0.00
				Shrink-swell	0.87		
498:							
Ultic Haploxerolls	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.28
						Hard to reclaim	0.50
499:							
Uncas	90	Fair		Poor		Poor	
		Water erosion	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
500:							
Vanbrunt	70	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Cobble content	0.23	Slope	0.16
		Low content of organic matter	0.88			Depth to bedrock	0.54
		Too acid	0.95				
		Cobble content	0.97				
Rock outcrop	15	Not rated		Not rated		Not rated	
501:							
Vanbrunt	70	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.23	Depth to bedrock	0.54
		Too acid	0.95				
		Cobble content	0.97				
Rock outcrop	15	Not rated		Not rated		Not rated	
502:							
Vanbrunt	55	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Depth to bedrock	0.54	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.88	Cobble content	0.23	Depth to bedrock	0.54
		Too acid	0.95				
		Cobble content	0.97				
Rock outcrop	30	Not rated		Not rated		Not rated	
503:							
Wannacott	85	Fair		Fair		Fair	
		Water erosion	0.68	Low strength	0.78	Hard to reclaim	0.46
		Low content of organic matter	0.88	Shrink-swell	0.99		
		Carbonate content	0.92				
504:							
Wannacott	85	Fair		Fair		Fair	
		Water erosion	0.68	Low strength	0.78	Slope	0.37
		Low content of organic matter	0.88	Shrink-swell	0.99	Hard to reclaim	0.46
		Carbonate content	0.92				
505:							
Wapal	85	Poor		Good		Poor	
		Droughty	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
506:							
Wapal	85	Poor		Fair		Poor	
		Droughty	0.00	Cobble content	0.01	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Cobble content	0.77				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
507:							
Wapal	85	Poor		Fair		Poor	
		Droughty	0.00	Slope	0.08	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.00
508:							
Wapal	85	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.00
509:							
Wellscreek	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
						Rock fragments	0.00
						Slope	0.16
510:							
Wellscreek	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
						Hard to reclaim	0.00
						Rock fragments	0.00
511:							
Wellscreek	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
				Cobble content	0.89	Hard to reclaim	0.00
						Rock fragments	0.00
512:							
Whitestone	85	Fair		Fair		Poor	
		Droughty	0.79	Cobble content	0.88	Hard to reclaim	0.00
		Low content of organic matter	0.88			Rock fragments	0.00
						Slope	0.16
513:							
Whitestone	85	Fair		Poor		Poor	
		Droughty	0.81	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	No cobble limitation	0.99	Hard to reclaim	0.00
						Rock fragments	0.00
514:							
Whitestone	85	Fair		Poor		Poor	
		Droughty	0.81	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	No cobble limitation	0.99	Hard to reclaim	0.00
						Rock fragments	0.00
515:							
Whitestone	85	Fair		Poor		Poor	
		Droughty	0.28	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	Cobble content	0.78	Hard to reclaim	0.00
		Stone content	0.91	Stone content	0.79	Rock fragments	0.00
516:							
Whitestone	65	Fair		Poor		Poor	
		Droughty	0.81	Slope	0.00	Slope	0.00
		Low content of organic matter	0.88	No cobble limitation	0.99	Hard to reclaim	0.00
						Rock fragments	0.00

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
516:							
Rock outcrop	20	Not rated		Not rated		Not rated	
517:							
Wilmont	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.96			Hard to reclaim	0.00
		Stone content	0.99			Rock fragments	0.00
518:							
Wilmont	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.96			Hard to reclaim	0.00
		Stone content	0.99			Rock fragments	0.00
519:							
Wilmont	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.85			Hard to reclaim	0.00
		Stone content	0.94			Rock fragments	0.00
520:							
Wilmont	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.85			Hard to reclaim	0.00
		Stone content	0.94			Rock fragments	0.00
521:							
Winchester	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Low content of organic matter	0.12				
		Droughty	0.19				
522:							
Winchester	90	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.82	Too sandy	0.00
		Wind erosion	0.00			Slope	0.00
		Low content of organic matter	0.12				
		Droughty	0.19				
523:							
Winchester	90	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Wind erosion	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Droughty	0.19				

Table 16.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
524:							
Winchester	70	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Slope	0.16
		Low content of organic matter	0.12				
		Droughty	0.19				
Rock outcrop	20	Not rated		Not rated		Not rated	
525:							
Winthrop	90	Poor		Fair		Poor	
		Droughty	0.00	Stone content	0.99	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Stone content	0.99			Slope	0.84
526:							
Wynhoff	80	Fair		Poor		Poor	
		Droughty	0.01	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.84	Slope	0.68	Slope	0.00
				Cobble content	0.97	Depth to bedrock	0.84
527:							
Wynhoff	80	Fair		Poor		Poor	
		Droughty	0.01	Slope	0.00	Slope	0.00
		Depth to bedrock	0.84	Depth to bedrock	0.00	Rock fragments	0.00
				Cobble content	0.97	Depth to bedrock	0.84
528:							
Xeric Torriorthents	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.02
529:							
Xeric Torriorthents	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Droughty	0.96	Cobble content	0.37	Rock fragments	0.00
						Hard to reclaim	0.02
530:							
Xerochrepts	45	Poor		Poor		Poor	
		Cobble content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.01	Cobble content	0.00	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
Rubble land	25	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
531:							
Water	100	Not rated		Not rated		Not rated	
532:							
Dam	100	Not rated		Not rated		Not rated	

Table 17.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
1:												
Achimin	0-18	Silt loam	CL-ML, ML	A-4	0	0	95-100	90-100	80-100	70-90	20-30	NP-10
	18-34	Silty clay loam, silty clay	CL	A-7	0	0	95-100	90-100	85-100	80-95	40-50	20-30
	34-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-100	75-90	25-35	5-15
2:												
Achimin	0-18	Silt loam	CL-ML, ML	A-4	0	0	95-100	90-100	80-100	70-90	20-30	NP-10
	18-34	Silty clay loam, silty clay	CL	A-7	0	0	95-100	90-100	85-100	80-95	40-50	20-30
	34-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-100	75-90	25-35	5-15
Calcic Pachic Haploxerolls	0-24	Silt loam	CL, CL-ML	A-4, A-6	0	0	85-100	75-100	70-100	60-90	25-35	5-15
	24-42	Silt loam, loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	80-100	75-100	60-100	40-90	20-35	5-15
	42-60	Silty clay loam, gravelly silt loam, fine sandy loam	CL, CL-ML, SC	A-2, A-4, A-6	0	0	70-100	60-100	50-100	30-90	20-40	5-20
3:												
Aeneas	0-10	Fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	65-80	40-60	0-14	NP
	10-27	Fine sandy loam, sandy loam	ML, SM	A-4	0	0	90-100	85-100	60-80	35-60	0-14	NP
	27-60	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	90-100	85-100	40-80	5-25	0-14	NP
4:												
Aeneas	0-10	Fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	65-80	40-60	0-14	NP
	10-27	Fine sandy loam, sandy loam	ML, SM	A-4	0	0	90-100	85-100	60-80	35-60	0-14	NP
	27-60	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	90-100	85-100	40-80	5-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
5:												
Ahtanum	0-12	Silt loam	ML	A-4	0	0	100	100	90-100	70-85	15-25	NP-5
	12-24	Silt loam	ML	A-4	0	0	100	100	90-100	80-90	15-25	NP-5
	24-25	Cemented			---	---	---	---	---	---	---	---
	25-60	Silt loam, very fine sandy loam, loam	ML	A-4	0	0	100	100	90-100	60-85	15-25	NP-5
6:												
Aits	0-4	Silt loam	ML	A-4	0	0	95-100	85-100	75-100	60-90	30-40	NP-5
	4-13	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	60-90	45-85	30-40	NP-5
	13-27	Gravelly loam, gravelly silt loam, sandy loam	GM, ML, SM	A-2, A-4	0	0-10	60-95	50-90	45-85	30-75	20-30	NP-5
	27-60	Gravelly sandy loam, gravelly loam, silt loam	GM, ML, SM	A-2, A-4	0	0-10	60-95	50-90	30-75	25-60	20-30	NP-5
7:												
Aits	0-4	Silt loam	ML	A-4	0	0	95-100	85-100	75-100	60-90	30-40	NP-5
	4-13	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	60-90	45-85	30-40	NP-5
	13-27	Gravelly loam, gravelly silt loam, sandy loam	GM, ML, SM	A-2, A-4	0	0-10	60-95	50-90	45-85	30-75	20-30	NP-5
	27-60	Gravelly sandy loam, gravelly loam, silt loam	GM, ML, SM	A-2, A-4	0	0-10	60-95	50-90	30-75	25-60	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
8:												
Aits	0-4	Silt loam	ML	A-4	0	0	95-100	85-95	75-95	60-85	30-40	NP-5
	4-12	Gravelly loam, silt loam	ML	A-4	0	0	85-100	75-95	65-90	50-75	25-35	NP-5
	12-33	Gravelly loam, gravelly sandy loam, very fine sandy loam	ML, SM	A-2, A-4	0	0	70-95	60-90	40-70	25-60	15-25	NP-5
	33-42	Gravelly sandy loam, sandy loam	SM	A-1, A-2	0	0	65-95	55-90	35-65	15-35	15-20	NP-5
	42-60	Very gravelly sand, gravelly loamy coarse sand, gravelly sand	GM, GP-GM, SM, SP-SM	A-1	0	0-5	45-85	35-75	20-50	5-15	0-14	NP
9:												
Anders	0-14	Silt loam	ML	A-4	0	0	95-100	75-100	75-85	60-75	20-30	NP-5
	14-23	Gravelly silt loam, silt loam, very fine sandy loam	ML, SM, GM	A-4	0	0-20	65-95	60-90	50-85	35-70	20-30	NP-5
	23-27	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
10:												
Andic Cryaquepts	0-9	Silt loam	ML	A-4	0	0	95-100	90-100	85-100	65-85	30-40	NP-5
	9-17	Silt loam, loam, fine sandy loam	ML, SM	A-4	0	0	80-100	75-100	60-90	35-75	20-30	NP-5
	17-22	Loam, fine sandy loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0	55-100	50-100	35-85	20-65	15-25	NP-5
	22-60	Stratified extremely gravelly sand to fine sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3, A-4	0	0-10	30-95	25-90	15-65	0-40	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
11:												
Annum	0-12	Silt loam	CL-ML	A-4	0	0	100	95-100	90-100	75-95	20-30	5-10
	12-24	Silt loam, loam	CL	A-6	0	0	95-100	90-100	80-95	65-85	30-40	10-20
	24-46	Loam, clay loam, sandy clay loam	CL, SC	A-6, A-7	0	0	90-100	80-100	70-90	40-75	30-45	10-20
	46-53	Loam, gravelly loam, gravelly sandy loam	CL-ML, SC-SM	A-2, A-4	0	0	80-95	60-85	40-75	20-55	20-30	5-10
	53-63	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
12:												
Annum	0-15	Silt loam	CL-ML	A-4	0	0	100	95-100	90-100	75-95	20-30	5-10
	15-24	Silt loam, loam	CL	A-6	0	0	95-100	90-100	80-95	65-85	30-40	10-20
	24-45	Loam, clay loam, sandy clay loam	CL, SC	A-6, A-7	0	0	90-100	80-100	70-90	40-75	30-45	10-20
	45-54	Loam, gravelly loam, gravelly sandy loam	CL-ML, SC-SM	A-2, A-4	0	0	80-95	60-85	40-75	20-55	20-30	5-10
	54-64	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
13:												
Annum	0-15	Silt loam	CL-ML	A-4	0	0	100	95-100	90-100	75-95	20-30	5-10
	15-24	Silt loam, loam	CL	A-6	0	0	95-100	90-100	80-95	65-85	30-40	10-20
	24-45	Loam, clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	90-100	80-100	70-90	40-75	30-45	10-20
	45-54	Loam, gravelly loam, gravelly sandy loam	CL-ML, SC-SM	A-2, A-4	0	0	80-95	60-85	40-75	20-55	20-30	5-10
	54-64	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Annum	0-12	Silt loam	CL-ML	A-4	0	0	100	95-100	90-100	75-95	20-30	5-10
	12-24	Silt loam, loam	CL	A-6	0	0	95-100	90-100	80-95	65-85	30-40	10-20
	24-46	Loam, clay loam, sandy clay loam	CL, SC	A-6, A-7	0	0	90-100	80-100	70-90	40-75	30-45	10-20
	46-53	Loam, gravelly loam, gravelly sandy loam	CL-ML, SC-SM	A-2, A-4	0	0	80-95	60-85	40-75	20-55	20-30	5-10
	53-63	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
14:												
Apex	0-3	Silt loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	30-40	NP-5
	3-13	Silt loam, loam	ML	A-4	0	0	95-100	85-100	70-95	55-85	30-40	NP-5
	13-30	Gravelly loam, gravelly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-10	65-100	55-90	40-80	20-70	20-30	NP-5
	30-60	Gravelly sandy loam, gravelly loam, stony sandy loam	GM, SM	A-1, A-2, A-4	0-10	0-20	60-85	55-75	35-65	20-50	20-30	NP-5
15:												
Apex	0-3	Silt loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	30-40	NP-5
	3-13	Silt loam, loam	ML	A-4	0	0	95-100	85-100	70-95	55-85	30-40	NP-5
	13-30	Gravelly loam, gravelly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-10	65-100	55-90	40-80	20-70	20-30	NP-5
	30-60	Gravelly sandy loam, gravelly loam, stony sandy loam	GM, SM	A-1, A-2, A-4	0-10	0-20	60-85	55-75	35-65	20-50	20-30	NP-5
16:												
Apex	0-3	Silt loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	30-40	NP-5
	3-13	Silt loam, loam	ML	A-4	0	0	95-100	85-100	70-95	55-85	30-40	NP-5
	13-30	Gravelly loam, gravelly sandy loam, silt loam	ML, SM	A-4, A-1, A-2	0	0-10	65-100	55-90	40-80	20-70	20-30	NP-5
	30-60	Gravelly sandy loam, gravelly loam, stony sandy loam	GM, SM	A-1, A-2, A-4	0-10	0-20	60-85	55-75	35-65	20-50	20-30	NP-5
17:												
Apex	0-3	Loam	ML	A-4	0	0	95-100	85-100	70-95	50-75	30-40	NP-5
	3-12	Silt loam, loam	ML	A-4	0	0	95-100	85-100	70-95	55-85	30-40	NP-5
	12-27	Gravelly loam, gravelly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-10	65-100	55-90	40-80	20-70	20-30	NP-5
	27-60	Gravelly sandy loam, gravelly loam, stony sandy loam	GM, SM	A-1, A-2, A-4	0-10	0-20	60-85	55-75	35-65	20-50	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
18:												
Apex	0-3	Loam	ML	A-4	0	0	95-100	85-100	70-95	50-75	30-40	NP-5
	3-12	Silt loam, loam	ML	A-4	0	0	95-100	85-100	70-95	55-85	30-40	NP-5
	12-27	Gravelly loam, gravelly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-10	65-100	55-90	40-80	20-70	20-30	NP-5
	27-60	Gravelly sandy loam, gravelly loam, stony sandy loam	GM, SM	A-1, A-2, A-4	0-10	0-20	60-85	55-75	35-65	20-50	20-30	NP-5
19:												
Apex	0-3	Loam	ML	A-4	0	0	95-100	85-100	70-95	50-75	30-40	NP-5
	3-12	Silt loam, loam	ML	A-4	0	0	95-100	85-100	70-95	55-85	30-40	NP-5
	12-27	Gravelly loam, gravelly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-10	65-100	55-90	40-80	20-70	20-30	NP-5
	27-60	Gravelly sandy loam, gravelly loam, stony sandy loam	GM, SM	A-1, A-2, A-4	0-10	0-20	60-85	55-75	35-65	20-50	20-30	NP-5
20:												
Aquic Xerofluvents	0-3	Silt loam	ML	A-4	0	0	90-100	75-100	65-90	50-70	15-25	NP-5
	3-15	Fine sandy loam, loamy sand	SM	A-2, A-4	0	0	95-100	85-100	70-85	30-50	15-20	NP-5
	15-60	Stratified extremely gravelly coarse sand to silt loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0-15	40-95	25-90	20-65	5-35	0-14	NP
21:												
Aquic Xerofluvents	0-5	Sandy loam	SM	A-2, A-4	0	0	95-100	85-100	60-80	25-50	15-20	NP-5
	5-60	Stratified very gravelly coarse sand to silt loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-4	0	0-15	45-95	45-85	15-50	5-45	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
22:												
Aquic Xerofluvents---	0-15	Fine sandy loam	SM	A-2, A-4	0	0	80-100	75-100	55-70	30-50	15-25	NP-5
	15-43	Fine sandy loam, loamy sand	SM	A-2, A-4	0	0	95-100	85-100	70-85	30-50	15-20	NP-5
	43-60	Stratified extremely gravelly coarse sand to silt loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0-15	40-95	25-90	20-65	5-35	0-14	NP
23:												
Badge----------	0-10	Very stony silt loam	GM, ML	A-4	5-15	15-45	55-75	50-70	45-65	35-60	25-35	NP-5
	10-38	Very stony clay loam, extremely cobbly loam, very gravelly clay loam	GC	A-2	10-20	0-50	40-60	20-55	15-35	10-30	30-45	10-20
	38-60	Very cobbly silt loam, extremely cobbly silt loam, very gravelly loam	GM	A-1, A-2, A-4	0-5	15-50	50-60	20-55	15-40	10-40	25-35	NP-5
24:												
Badge----------	0-10	Very stony silt loam	GM, ML	A-4	5-15	15-45	55-75	50-70	45-65	35-60	25-35	NP-5
	10-38	Very stony clay loam, extremely cobbly loam, very gravelly clay loam	GC	A-2	10-20	0-50	40-60	20-55	15-35	10-30	30-45	10-20
	38-60	Very cobbly silt loam, extremely cobbly silt loam, very gravelly loam	GM	A-1, A-2, A-4	0-5	15-50	50-60	20-55	15-40	10-40	25-35	NP-5
Rubble land-----	0-60	Fragmental material			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
25:												
Badland	0-60	Weathered bedrock			---	---	---	---	---	---	---	---
26:												
Bakeoven	0-3	Very cobbly silt loam	GM, ML, SM	A-4	0-5	40-55	55-80	50-75	45-70	40-65	25-35	NP-10
	3-7	Very cobbly silt loam, very cobbly loam, extremely cobbly loam	GM, SM	A-2, A-4	0-5	40-65	40-70	35-65	30-60	25-50	25-35	NP-10
	7-11	Unweathered bedrock			---	---	---	---	---	---	---	---
27:												
Bakeoven	0-3	Very cobbly silt loam	GM, ML, SM	A-4	0-5	40-55	55-80	50-75	45-70	40-65	25-35	NP-10
	3-7	Very cobbly silt loam, very cobbly loam, extremely cobbly loam	GM, SM	A-2, A-4	0-5	40-65	40-70	35-65	30-60	25-50	25-35	NP-10
	7-11	Unweathered bedrock			---	---	---	---	---	---	---	---
Olical	0-15	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
	15-23	Silt loam, loam, very fine sandy loam	CL-ML, SC-SM	A-4	0	0	80-100	75-100	65-95	40-80	20-30	5-10
	23-38	Loam, gravelly silt loam	CL-ML, GC-GM	A-4	0	0-10	60-85	55-85	50-80	40-75	20-30	5-10
	38-51	Gravelly loam, very gravelly silt loam, very cobbly loam	GC-GM, SC-SM	A-2, A-4	0-5	0-30	50-80	40-70	35-65	25-50	20-30	5-10
	51-55	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
28:												
Bakeoven	0-3	Very cobbly silt loam	GM, ML, SM	A-4	0-5	40-55	55-80	50-75	45-70	40-65	25-35	NP-10
	3-7	Very cobbly silt loam, very cobbly loam, extremely cobbly loam	GM, SM	A-2, A-4	0-5	40-65	40-70	35-65	30-60	25-50	25-35	NP-10
	7-11	Unweathered bedrock			---	---	---	---	---	---	---	---
Timentwa	0-18	Loam	ML, SM	A-4	0	0-5	85-100	80-95	60-85	40-65	20-30	NP-5
	18-41	Gravelly very fine sandy loam, gravelly loam, loam	ML, SM	A-2, A-4	0	0-15	70-100	60-90	50-80	30-60	15-25	NP-5
	41-56	Gravelly fine sandy loam, cobbly loam, cobbly sandy loam	GM, SM	A-1, A-2, A-4	0-5	5-15	60-90	55-85	35-70	20-50	15-25	NP-5
	56-60	Cemented			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
29:												
Baldknob	0-4	Very stony loam	CL-ML, GC-GM, GM, ML	A-4	10-25	10-20	60-90	55-85	50-80	35-60	20-30	NP-10
	4-14	Very gravelly loam, extremely gravelly loam, very cobbly loam	GC-GM, GM	A-1, A-2, A-4	0-10	10-30	35-65	25-55	20-50	15-40	20-30	NP-10
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
29:												
Thout	0-4	Gravelly loam	GM, ML, SM	A-4	0	0-5	70-85	60-75	50-65	45-60	20-30	NP-5
	4-18	Very gravelly loam, gravelly loam, very cobbly sandy loam	GM, SM	A-4, A-2	0-10	0-20	60-80	50-70	35-65	25-50	20-30	NP-5
	18-26	Very gravelly loam, very cobbly sandy loam	GM, SM	A-2	0-10	15-25	55-80	45-55	35-55	25-35	20-30	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
30:												
Baldknob	0-4	Very stony loam	CL-ML, GC-GM, GM, ML	A-4	10-25	10-20	60-90	55-85	50-80	35-60	20-30	NP-10
	4-14	Very gravelly loam, extremely gravelly loam, very cobbly loam	GC-GM, GM	A-1, A-2, A-4	0-10	10-30	35-65	25-55	20-50	15-40	20-30	NP-10
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Thout	0-4	Gravelly loam	GM, ML, SM	A-4	0	0-5	70-85	60-75	50-65	45-60	20-30	NP-5
	4-18	Very gravelly loam, gravelly loam, very cobbly sandy loam	GM, SM	A-2, A-4	0-10	0-20	60-80	50-70	35-65	25-50	20-30	NP-5
	18-26	Very gravelly loam, very cobbly sandy loam	GM, SM	A-2	0-10	15-25	55-80	45-55	35-55	25-35	20-30	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
31:												
Barnellcreek----	0-26	Silt loam	ML	A-4	0	0	90-100	75-100	70-100	65-90	30-40	NP-5
	26-42	Gravelly loam, gravelly sandy loam	ML, SM	A-2, A-4	0	0-10	65-90	60-75	40-70	25-55	15-25	NP-5
	42-60	Gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam	GM, SM	A-1	0-5	10-30	45-75	40-70	25-45	15-25	15-20	NP-5
32:												
Bearspring------	0-12	Loam	ML	A-4	0	0	85-95	75-90	65-85	50-65	20-30	NP-5
	12-35	Gravelly loam, very cobbly loam, very gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0-35	50-85	40-75	25-70	15-55	15-25	NP-5
	35-50	Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0-5	0-45	45-85	40-50	20-50	15-25	15-25	NP-5
	50-60	Very gravelly sandy loam, very gravelly loamy coarse sand, extremely gravelly coarse sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	0-25	20-70	15-50	5-45	5-25	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
33:												
Bearspring------	0-6	Cobbly loam	ML, SM	A-4	0-10	10-40	80-95	75-90	55-80	40-60	20-30	NP-5
	6-11	Loam, gravelly loam, cobbly loam	ML, SM	A-4	0	0-25	70-90	60-85	50-65	35-55	20-25	NP-5
	11-27	Gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, SM	A-1, A-2, A-4	0-10	0-30	50-85	40-75	25-65	10-45	15-25	NP-5
	27-50	Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam	SM, GM	A-1, A-2	0-10	25-30	40-80	35-65	15-50	15-30	15-20	NP-5
	50-60	Very gravelly sandy loam, very gravelly loamy coarse sand, extremely gravelly coarse sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-10	0-25	25-70	15-50	5-45	0-25	15-20	NP-5
34:												
Bernhill--------	0-4	Loam	ML	A-4	0	0-5	85-100	75-100	65-90	60-80	30-35	NP-5
	4-27	Silt loam, loam, gravelly fine sandy loam	ML	A-4	0	0-5	70-95	60-90	55-90	50-80	30-35	NP-5
	27-36	Gravelly loam, gravelly silt loam, clay loam	GM, ML, SM	A-4, A-5, A-6, A-7	0	0-5	60-90	50-85	40-75	35-65	30-45	5-15
	36-60	Gravelly sandy loam, gravelly silt loam, gravelly fine sandy loam	GC-GM, SC-SM	A-2, A-4	0	0-15	60-80	55-75	35-65	25-45	20-25	5-10

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
35:												
Bernhill	0-4	Loam	ML	A-4	0	0-5	85-100	75-100	65-90	60-80	30-35	NP-5
	4-27	Silt loam, loam, gravelly fine sandy loam	ML	A-4	0	0-5	70-95	60-90	55-90	50-80	30-35	NP-5
	27-36	Gravelly loam, gravelly silt loam, clay loam	GM, ML, SM	A-4, A-5, A-6, A-7	0	0-5	60-90	50-85	40-75	35-65	30-45	5-15
	36-60	Gravelly sandy loam, gravelly silt loam, gravelly fine sandy loam	GC-GM, SC-SM	A-2, A-4	0	0-15	60-80	55-75	35-65	25-45	20-25	5-10
36:												
Beverly	0-6	Gravelly loamy sand	SM	A-1	0	0-15	60-80	55-75	30-50	10-20	0-14	NP
	6-17	Gravelly loamy sand, gravelly loamy fine sand	SM	A-1	0	0-15	60-80	55-75	30-45	10-20	0-14	NP
	17-60	Very gravelly sand, extremely gravelly coarse sand, very cobbly sand	GP	A-1	0-10	10-35	30-50	20-45	5-20	0-5	0-14	NP
37:												
Bisbee	0-5	Loamy fine sand	SM	A-2	0	0	100	90-100	65-75	20-30	0-14	NP
	5-40	Loamy fine sand, loamy sand, fine sand	SM	A-2	0	0	90-100	85-100	50-75	20-30	0-14	NP
	40-60	Fine sand, sand, loamy fine sand	SM, SP-SM	A-2, A-3	0	0	90-100	80-100	50-75	5-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
38:												
Bisbee----------	0-5	Loamy fine sand	SM	A-2	0	0	100	90-100	65-75	20-30	0-14	NP
	5-40	Loamy fine sand, loamy sand, fine sand	SM	A-2	0	0	90-100	85-100	50-75	20-30	0-14	NP
	40-60	Fine sand, sand, loamy fine sand	SM, SP-SM	A-2, A-3	0	0	90-100	80-100	50-75	5-15	0-14	NP
39:												
Boesel----------	0-13	Fine sandy loam	SM	A-4	0	0	95-100	85-100	75-85	40-50	15-25	NP-5
	13-20	Fine sandy loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	90-100	85-100	65-85	35-60	15-25	NP-10
	20-29	Loamy sand, gravelly loamy sand	SM	A-1, A-2	0	0	80-90	60-90	40-60	15-25	0-14	NP
	29-60	Very gravelly loamy sand, very gravelly sand, very gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	0-10	40-60	25-50	10-30	0-10	0-14	NP
40:												
Bong----------	0-8	Sandy loam	SM	A-2, A-4	0	0	95-100	85-100	60-75	30-40	0-14	NP
	8-17	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	85-100	60-75	30-40	0-14	NP
	17-60	Sand, gravelly loamy coarse sand, very gravelly sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-20	70-95	65-90	25-60	0-25	0-14	NP
41:												
Bong----------	0-8	Sandy loam	SM	A-2, A-4	0	0	95-100	85-100	60-75	30-40	0-14	NP
	8-17	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	85-100	60-75	30-40	0-14	NP
	17-60	Sand, gravelly loamy coarse sand, very gravelly sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-20	70-95	65-90	25-60	0-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
42:												
Bong	0-13	Sandy loam	SM	A-2, A-4	0	0	95-100	85-100	60-75	30-40	0-14	NP
	13-21	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	85-100	60-75	30-40	0-14	NP
	21-60	Sand, gravelly loamy sand, very gravelly sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0-20	70-95	65-90	25-60	0-25	0-14	NP
43:												
Borgeau	0-9	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	45-75	20-30	NP-5
	9-17	Very gravelly loam, very gravelly sandy loam, gravelly loam	GM	A-1, A-2, A-4	0-2	10-15	55-75	45-65	30-60	15-50	20-30	NP-5
	17-60	Very gravelly loam, extremely gravelly loam, very cobbly sandy loam	GM	A-1, A-2	0-5	20-35	35-55	25-45	15-40	10-35	20-30	NP-5
44:												
Borgeau	0-9	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	45-75	20-30	NP-5
	9-17	Very gravelly loam, very gravelly sandy loam, gravelly loam	GM	A-1, A-2, A-4	0-2	10-15	55-75	45-65	30-60	15-50	20-30	NP-5
	17-60	Very gravelly loam, extremely gravelly loam, very cobbly sandy loam	GM	A-1, A-2	0-5	20-35	35-55	25-45	15-40	10-35	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
45:												
Borgeau	0-9	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	45-75	20-30	NP-5
	9-17	Very gravelly loam, very gravelly sandy loam, gravelly loam	GM	A-1, A-2, A-4	0-2	10-15	55-75	45-65	30-60	15-50	20-30	NP-5
	17-60	Very gravelly loam, extremely gravelly loam, very cobbly sandy loam	GM	A-1, A-2	0-5	20-35	35-55	25-45	15-40	10-35	20-30	NP-5
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
46:												
Borosaprists	0-8	Mucky peat	PT	A-8	0	0	---	---	---	---	---	---
	8-18	Muck	PT	A-8	0	0	---	---	---	---	---	---
	18-55	Stratified very gravelly coarse sand to silt loam	GM, ML, SM	A-1, A-2, A-4	0	0-5	50-100	40-100	20-80	10-70	0-20	NP-5
	55-60	Muck	PT	A-8	0	0	---	---	---	---	---	---
47:												
Bossburg	0-6	Muck	PT	A-8	0	0	---	---	---	---	---	---
	6-13	Silt loam	ML, OL	A-4, A-5	0	0	100	100	95-100	90-100	35-50	NP-10
	13-29	Silt loam	ML	A-4	0	0	100	100	95-100	90-100	30-40	5-10
	29-60	Stratified fine sandy loam to silt loam	ML	A-4	0	0	100	100	75-95	50-90	20-35	NP-10
48:												
Broadax	0-11	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	25-35	NP-10
	11-38	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-15
	38-60	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	25-35	NP-10
49:												
Broadax	0-11	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	25-35	NP-10
	11-38	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-15
	38-60	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	25-35	NP-10

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
50:												
Brusher	0-9	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	55-75	25-35	NP-5
	9-14	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	90-100	75-100	65-95	35-75	25-35	NP-5
	14-24	Loam, sandy loam, gravelly loam	CL-ML, SC-SM	A-2, A-4	0	0	85-100	70-100	50-90	25-65	20-30	5-10
	24-50	Clay loam, loam, gravelly sandy loam	CL, SC	A-2, A-6	0	0	70-100	55-100	40-90	25-70	25-40	10-20
	50-60	Coarse sandy loam, loamy coarse sand, gravelly coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	5-30	15-20	NP-5
51:												
Brusher	0-5	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	55-75	25-35	NP-5
	5-17	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	90-100	75-100	65-95	35-75	25-35	NP-5
	17-51	Loam, sandy loam, gravelly loam	CL-ML, SC-SM	A-2, A-4	0	0	85-100	70-100	50-90	25-65	20-30	5-10
	51-56	Clay loam, loam, gravelly sandy loam	CL, SC	A-2, A-6	0	0	70-100	55-100	40-90	25-70	25-40	10-20
	56-60	Coarse sandy loam, loamy coarse sand, gravelly coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	5-30	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
52:												
Brusher	0-9	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	55-75	25-35	NP-5
	9-14	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	90-100	75-100	65-95	35-75	25-35	NP-5
	14-24	Loam, sandy loam, gravelly loam	CL-ML, SC-SM	A-2, A-4	0	0	85-100	70-100	50-90	25-65	20-30	5-10
	24-50	Clay loam, loam, gravelly sandy loam	CL, SC	A-2, A-6	0	0	70-100	55-100	40-90	25-70	25-40	10-20
	50-60	Coarse sandy loam, loamy coarse sand, gravelly coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	5-30	15-20	NP-5
53:												
Brusher	0-9	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	55-75	25-35	NP-5
	9-14	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	90-100	75-100	65-95	35-75	25-35	NP-5
	14-24	Loam, sandy loam, gravelly loam	CL-ML, SC-SM	A-2, A-4	0	0	85-100	70-100	50-90	25-65	20-30	5-10
	24-50	Clay loam, loam, gravelly sandy loam	CL, SC	A-2, A-6	0	0	70-100	55-100	40-90	25-70	25-40	10-20
	50-60	Coarse sandy loam, loamy coarse sand, gravelly coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	5-30	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
54:												
Buhrig	0-7	Very stony loam	GM, SM	A-4	10-25	5-10	65-85	55-80	40-60	35-50	25-35	NP-5
	7-18	Extremely stony sandy loam, extremely stony loam, very cobbly loam	GM, SM	A-1, A-2, A-4	25-35	15-40	55-75	40-60	30-60	15-45	20-30	NP-5
	18-32	Extremely stony sandy loam, very cobbly sandy loam	GM, SM	A-1, A-2	25-35	20-50	50-70	45-60	30-50	15-30	0-14	NP
	32-36	Unweathered bedrock			---	---	---	---	---	---	---	---
55:												
Buhrig	0-7	Very stony loam	GM, SM	A-4	10-25	5-10	65-85	55-80	40-60	35-50	25-35	NP-5
	7-18	Extremely stony sandy loam, extremely stony loam, very cobbly loam	GM, SM	A-1, A-2, A-4	25-35	15-40	55-75	40-60	30-60	15-45	20-30	NP-5
	18-32	Extremely stony sandy loam, very cobbly sandy loam	GM, SM	A-1, A-2	25-35	20-50	50-70	45-60	30-50	15-30	0-14	NP
	32-36	Unweathered bedrock			---	---	---	---	---	---	---	---
56:												
Buhrig	0-4	Silt loam	ML	A-4	0	0	95-100	90-100	80-100	65-90	30-40	NP-5
	4-13	Silt loam	ML	A-4	0	0	95-100	90-100	80-100	65-90	30-40	NP-5
	13-31	Extremely flaggy loam, extremely channery loam, very channery sandy loam	GM	A-1, A-2	25-35	10-25	30-60	20-50	15-40	10-30	20-30	NP-5
	31-35	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
57:												
Buhrig	0-7	Very stony loam	GM, SM	A-4	10-25	5-10	65-85	55-80	40-60	35-50	25-35	NP-5
	7-18	Extremely stony sandy loam, extremely stony loam, very cobbly loam	GM, SM	A-1, A-2, A-4	25-35	15-40	55-75	40-60	30-60	15-45	20-30	NP-5
	18-32	Extremely stony sandy loam, very cobbly sandy loam	GM, SM	A-1, A-2	25-35	20-50	50-70	45-60	30-50	15-30	0-14	NP
	32-36	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
58:												
Buhrig	0-7	Very stony loam	GM, SM	A-4	10-25	5-10	65-85	55-80	40-60	35-50	25-35	NP-5
	7-18	Extremely stony sandy loam, extremely stony loam, very cobbly loam	GM, SM	A-1, A-2, A-4	25-35	15-40	55-75	40-60	30-60	15-45	20-30	NP-5
	18-32	Extremely stony sandy loam, very cobbly sandy loam	GM, SM	A-1, A-2	25-35	20-50	50-70	45-60	30-50	15-30	0-14	NP
	32-36	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
59:												
Canteen	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	80-95	65-80	25-35	NP-5
	5-13	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0	80-100	70-100	60-95	35-70	25-35	NP-5
	13-34	Sandy loam, coarse sandy loam, gravelly loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	55-90	40-75	20-60	20-30	NP-5
	34-45	Loamy coarse sand, gravelly loamy sand, coarse sandy loam	SM	A-1, A-2	0	0-10	65-95	55-85	35-65	10-30	15-20	NP-5
	45-55	Weathered bedrock			---	---	---	---	---	---	---	---
60:												
Canteen	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	80-95	65-80	25-35	NP-5
	5-13	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0	80-100	70-100	60-95	35-70	25-35	NP-5
	13-34	Sandy loam, coarse sandy loam, gravelly loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	55-90	40-75	20-60	20-30	NP-5
	34-45	Loamy coarse sand, gravelly loamy sand, coarse sandy loam	SM	A-1, A-2	0	0-10	65-95	55-85	35-65	10-30	15-20	NP-5
	45-55	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
61:												
Canteen---	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	80-95	65-80	25-35	NP-5
	5-14	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0	80-100	70-100	60-95	35-70	25-35	NP-5
	14-27	Sandy loam, coarse sandy loam, gravelly loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	55-90	40-75	20-60	20-30	NP-5
	27-50	Loamy coarse sand, gravelly loamy sand, coarse sandy loam	SM	A-1, A-2	0	0-10	65-95	55-85	35-65	10-30	15-20	NP-5
	50-60	Weathered bedrock			---	---	---	---	---	---	---	---
62:												
Canteen---	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	80-95	65-80	25-35	NP-5
	5-14	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0	80-100	70-100	60-95	35-70	25-35	NP-5
	14-27	Sandy loam, coarse sandy loam, gravelly loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	55-90	40-75	20-60	20-30	NP-5
	27-50	Loamy coarse sand, gravelly loamy sand, coarse sandy loam	SM	A-1, A-2	0	0-10	65-95	55-85	35-65	10-30	15-20	NP-5
	50-60	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
63:												
Capoose	0-2	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	55-80	30-40	NP-5
	2-17	Silt loam, loam	ML, SM	A-4	0	0-5	85-95	80-90	55-85	40-70	30-40	NP-5
	17-35	Very gravelly sandy loam, extremely gravelly sandy loam, extremely cobbly sandy loam	GM, GP-GM	A-1	0-10	20-45	15-50	15-45	10-30	5-20	15-20	NP
	35-39	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
64:												
Capoose	0-2	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	55-80	30-40	NP-5
	2-17	Silt loam, loam	ML, SM	A-4	0	0-5	85-95	80-90	55-85	40-70	30-40	NP-5
	17-35	Very gravelly sandy loam, extremely gravelly sandy loam, extremely cobbly sandy loam	GM, GP-GM	A-1	0-10	20-45	15-50	15-45	10-30	5-20	15-20	NP
	35-39	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
65:												
Capoose	0-2	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	55-80	30-40	NP-5
	2-17	Silt loam, loam	ML, SM	A-4	0	0-5	85-95	80-90	55-85	40-70	30-40	NP-5
	17-35	Very gravelly sandy loam, extremely gravelly sandy loam, extremely cobbly sandy loam	GM, GP-GM	A-1	0-10	20-45	15-50	15-45	10-30	5-20	15-20	NP
	35-39	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
66:												
Capoose	0-2	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	55-80	30-40	NP-5
	2-17	Silt loam, loam	ML, SM	A-4	0	0-5	85-95	80-90	55-85	40-70	30-40	NP-5
	17-35	Very gravelly sandy loam, extremely gravelly sandy loam, extremely cobbly sandy loam	GM, GP-GM	A-1	0-10	20-45	15-50	15-45	10-30	5-20	15-20	NP
	35-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
67:												
Cashmere	0-10	Fine sandy loam	SM	A-4	0	0	95-100	90-100	65-85	35-50	15-20	NP-5
	10-36	Very fine sandy loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4	0	0-5	85-100	80-100	55-85	30-55	15-20	NP-5
	36-46	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5
	46-60	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5
68:												
Cashmere	0-10	Fine sandy loam	SM	A-4	0	0	95-100	90-100	65-85	35-50	15-20	NP-5
	10-36	Very fine sandy loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4	0	0-5	85-100	80-100	55-85	30-55	15-20	NP-5
	36-46	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5
	46-60	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
69:												
Cashmere	0-10	Fine sandy loam	SM	A-4	0	0	95-100	90-100	65-85	35-50	15-20	NP-5
	10-36	Very fine sandy loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4	0	0-5	85-100	80-100	55-85	30-55	15-20	NP-5
	36-46	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5
	46-60	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5
70:												
Cashmere	0-10	Fine sandy loam	SM	A-4	0	0	95-100	90-100	65-85	35-50	15-20	NP-5
	10-36	Very fine sandy loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4	0	0-5	85-100	80-100	55-85	30-55	15-20	NP-5
	36-46	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5
	46-60	Fine sandy loam, sandy loam, coarse sandy loam	SM	A-2, A-4	0	0-5	85-100	80-100	50-80	25-50	15-20	NP-5
71:												
Cashmont	0-19	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-85	55-75	30-45	20-35	15-25	NP-5
	19-38	Gravelly sandy loam, gravelly fine sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	35-55	20-35	15-25	NP-5
	38-60	Very gravelly loamy sand, very gravelly sandy loam, gravelly sand	GM, GP-GM, SM, SP-SM	A-1	0	0-10	45-75	35-70	20-50	5-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
72:												
Cashmont	0-19	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-85	55-75	30-45	20-35	15-25	NP-5
	19-38	Gravelly sandy loam, gravelly fine sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	35-55	20-35	15-25	NP-5
	38-60	Very gravelly loamy sand, very gravelly sandy loam, gravelly sand	GM, GP-GM, SM, SP-SM	A-1	0	0-10	45-75	35-70	20-50	5-25	0-14	NP
73:												
Cedonia	0-2	Silt loam	ML	A-4	0	0	100	100	95-100	90-95	20-30	NP-5
	2-24	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-95	25-40	5-15
	24-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-90	25-40	5-15
74:												
Cedonia	0-2	Silt loam	ML	A-4	0	0	100	100	95-100	90-95	20-30	NP-5
	2-24	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-95	25-40	5-15
	24-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-90	25-40	5-15
75:												
Cedonia	0-2	Silt loam	ML	A-4	0	0	100	100	95-100	90-95	20-30	NP-5
	2-24	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-95	25-40	5-15
	24-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-90	25-40	5-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
76:												
Cedonia	0-2	Silt loam	ML	A-4	0	0	100	100	95-100	90-95	20-30	NP-5
	2-24	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-95	25-40	5-15
	24-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-90	25-40	5-15
77:												
Centralpeak	0-6	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	6-16	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	16-21	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	21-25	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
Centralpeak	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
78:												
Centralpeak-----	0-6	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	6-16	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	16-21	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	21-25	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
Centralpeak-----	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
79:												
Centralpeak-----	0-6	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	6-16	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	16-21	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	21-25	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
Centralpeak-----	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
80:												
Centralpeak-----	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---
81:												
Centralpeak-----	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
82:												
Centralpeak-----	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---
83:												
Centralpeak-----	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-4, A-1, A-2	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
83:												
Brusher	0-5	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	55-75	25-35	NP-5
	5-17	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	90-100	75-100	65-95	35-75	25-35	NP-5
	17-56	Loam, sandy loam, gravelly loam	CL-ML, SC-SM	A-2, A-4	0	0	85-100	70-100	50-90	25-65	20-30	5-10
	56-60	Coarse sandy loam, loamy coarse sand, gravelly coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	5-30	15-20	NP-5
84:												
Centralpeak	0-6	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	6-16	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	16-21	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	21-25	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
84:												
Centralpeak-----	0-4	Loam	ML	A-4	0	0	95-100	80-100	75-90	55-65	25-35	NP-5
	4-12	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-10	80-100	65-100	60-95	30-55	25-35	NP-5
	12-20	Loam, coarse sandy loam, gravelly coarse sandy loam	ML, SM	A-1, A-2, A-4	0	0-10	70-95	60-85	35-80	15-55	20-30	NP-5
	20-29	Sandy loam, gravelly loamy coarse sand, gravelly coarse sandy loam	SM	A-1, A-2, A-4	0	0-10	70-95	55-85	35-70	10-40	15-20	NP-5
	29-39	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
85:												
Chumstick-------	0-7	Very stony loam	GM	A-2, A-4	10-25	10-20	60-75	50-70	45-65	30-50	15-25	NP-5
	7-12	Very cobbly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-5	15-40	30-50	20-45	15-40	10-35	15-25	NP-5
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
86:												
Chumstick	0-7	Very stony loam	GM	A-2, A-4	10-25	10-20	60-75	50-70	45-65	30-50	15-25	NP-5
	7-12	Very cobbly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-5	15-40	30-50	20-45	15-40	10-35	15-25	NP-5
	12-16	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
87:												
Codylake	0-5	Loam	ML	A-4	0	0	95-100	85-100	80-95	60-75	30-40	NP-5
	5-24	Loam, gravelly fine sandy loam, gravelly sandy loam	ML, SM	A-4	0	0	85-100	70-100	50-95	35-65	30-40	NP-5
	24-43	Gravelly sandy loam, gravelly coarse sandy loam, sandy loam	SM	A-1, A-2	0	0-10	70-95	55-85	35-60	20-35	15-20	NP-5
	43-53	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
88:												
Codylake	0-5	Loam	ML	A-4	0	0	95-100	85-100	80-95	60-75	30-40	NP-5
	5-24	Loam, gravelly fine sandy loam, gravelly sandy loam	ML, SM	A-4	0	0	85-100	70-100	50-95	35-65	30-40	NP-5
	24-43	Gravelly sandy loam, gravelly coarse sandy loam, sandy loam	SM	A-1, A-2	0	0-10	70-95	55-85	35-60	20-35	15-20	NP-5
	43-53	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
89:												
Codylake	0-5	Loam	ML	A-4	0	0	95-100	85-100	80-95	60-75	30-40	NP-5
	5-24	Loam, gravelly fine sandy loam, gravelly sandy loam	ML, SM	A-4	0	0	85-100	70-100	50-95	35-65	30-40	NP-5
	24-43	Gravelly sandy loam, gravelly coarse sandy loam, sandy loam	SM	A-1, A-2	0	0-10	70-95	55-85	35-60	20-35	15-20	NP-5
	43-53	Weathered bedrock			---	---	---	---	---	---	---	---
90:												
Colockum	0-10	Loam	CL-ML	A-4	0	0-5	95-100	90-100	75-95	55-75	20-30	5-10
	10-38	Loam, clay loam, gravelly clay loam	CL	A-6	0	0-10	75-95	70-90	65-85	50-70	30-40	10-20
	38-60	Silty clay loam, silt loam, gravelly loam	CL	A-6	0	0-10	75-95	70-90	60-85	50-80	30-40	10-20
91:												
Colockum	0-11	Stony loam	CL-ML	A-4	5-15	5-15	90-100	80-90	70-85	60-75	20-30	5-10
	11-22	Silt loam, silty clay loam, cobbly silt loam	CL	A-6	0	0-20	85-95	75-90	70-90	50-80	25-35	10-15
	22-36	Loam, gravelly clay loam, cobbly clay loam	CL	A-6	0	10-25	75-95	70-90	65-85	50-70	25-35	10-15
	36-46	Gravelly silty clay loam, silty clay loam, silt loam	CL	A-6	0	0-10	80-90	70-90	60-85	60-80	30-40	10-15
	46-60	Gravelly silty clay loam, very gravelly silty clay loam, gravelly loam	CL, GC, SC	A-6	0	5-20	60-80	45-75	40-60	35-60	30-40	10-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
92:												
Colockum--------	0-10	Bouldery loam	CL-ML	A-4	5-15	5-15	90-100	80-90	70-85	60-75	20-30	5-10
	10-33	Loam, gravelly clay loam, cobbly clay loam	CL	A-6	0	10-25	75-95	70-90	65-85	50-70	25-35	10-15
	33-60	Gravelly silty clay loam, very gravelly silty clay loam, gravelly loam	CL, GC, SC	A-6	0	5-20	60-80	45-75	40-60	35-60	30-40	10-15
93:												
Conconully------	0-15	Fine sandy loam	SM	A-4	0	0	90-95	85-95	40-65	35-50	15-25	NP-5
	15-35	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam	GM, SM	A-1, A-2, A-4	0	0-10	55-95	50-90	30-70	20-40	15-25	NP-5
	35-60	Gravelly sandy loam, gravelly fine sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-55	15-35	15-25	NP-5
94:												
Conconully------	0-15	Fine sandy loam	SM	A-4	0	0	90-95	85-95	40-65	35-50	15-25	NP-5
	15-35	Fine sandy loam, gravelly fine sandy loam, gravelly sandy loam	GM, SM	A-1, A-2, A-4	0	0-10	55-95	50-90	30-70	20-40	15-25	NP-5
	35-60	Gravelly sandy loam, gravelly fine sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-55	15-35	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
95:												
Conconully------	0-9	Stony fine sandy loam	SM	A-2, A-4	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	9-32	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	32-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
96:												
Conconully------	0-9	Stony fine sandy loam	SM	A-2, A-4	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	9-32	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	32-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
97:												
Conconully------	0-12	Stony fine sandy loam	SM	A-2, A-4	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	12-21	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
98:												
Conconully------	0-10	Bouldery fine sandy loam	SM	A-2, A-4	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	10-25	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	25-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
99:												
Conconully------	0-9	Stony fine sandy loam	SM	A-2, A-4	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	9-32	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	32-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
Bakeoven--------	0-3	Very cobbly silt loam	GM, ML, SM	A-4	0-5	40-55	55-80	50-75	45-70	40-65	25-35	NP-10
	3-7	Very cobbly silt loam, very cobbly loam, extremely cobbly loam	GM, SM	A-2, A-4	0-5	40-65	40-70	35-65	30-60	25-50	25-35	NP-10
	7-11	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
100:												
Conconully------	0-7	Very stony fine sandy loam	SM	A-2, A-4	10-25	0-5	70-90	65-90	50-70	30-50	15-20	NP-5
	7-21	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
101:												
Conconully------	0-7	Very stony fine sandy loam	SM	A-2, A-4	10-25	0-5	70-90	65-90	50-70	30-50	15-20	NP-5
	7-21	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
102:												
Conconully------	0-10	Bouldery fine sandy loam	SM	A-2, A-4	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	10-25	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	25-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
Swakane---------	0-7	Very stony loam	GC-GM	A-2, A-4	10-20	20-25	55-70	45-65	40-60	30-50	20-30	5-10
	7-11	Very gravelly loam, very gravelly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	11-14	Extremely gravelly sandy loam, very gravelly sandy loam, very cobbly loam	GM	A-1, A-2	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
103:												
Couleedam-------	0-3	Very stony sandy loam	GM, SM	A-1, A-2	10-25	10-30	60-90	55-85	35-60	20-35	15-25	NP-5
	3-8	Very gravelly sandy loam, very cobbly sandy loam, gravelly sandy loam	GM, SM	A-1, A-2	0-5	10-40	50-90	45-85	30-60	15-35	15-25	NP-5
	8-15	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0-10	10-35	40-70	35-50	20-30	10-25	15-25	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
104:												
Coxlake---------	0-6	Silt loam	CL-ML, ML	A-4	0	0	80-100	75-100	70-95	60-90	20-30	NP-10
	6-29	Silt loam, loam, very fine sandy loam	ML	A-4	0	0	95-100	90-100	60-80	50-70	15-25	NP-5
	29-48	Silt loam, loam, gravelly sandy loam	ML, SM	A-2, A-4	0	0	75-100	70-100	35-80	25-70	15-25	NP-5
	48-60	Stratified very gravelly sand to fine sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3	0-10	0-15	45-95	40-90	25-65	5-35	0-20	NP-5
105:												
Cryofluvents----	0-5	Loam	ML	A-4	0	0	80-100	75-100	65-95	50-85	15-25	NP-5
	5-12	Stratified sandy loam to silt loam	ML, SM	A-2, A-4	0	0	80-100	75-100	50-85	30-75	15-25	NP-5
	12-60	Stratified extremely gravelly coarse sand to very fine sandy loam	GP, GP-GM, SM, SP-SM	A-1, A-2, A-3, A-4	0-5	0-15	25-95	15-90	10-70	0-40	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
106:												
Cubcreek--------	0-10	Fine sandy loam	ML, SM	A-2, A-4	0	0	95-100	85-100	75-95	30-55	15-25	NP-5
	10-19	Stratified gravelly loamy sand to fine sandy loam	ML, SM	A-2, A-4	0-5	0-10	90-100	70-100	50-95	25-75	15-25	NP-5
	19-60	Stratified gravelly loamy fine sand to loam	SM	A-1, A-2, A-4	0	0	75-100	70-95	40-85	20-40	15-25	NP-5
107:												
Cumulic Haploxerolls---	0-30	Gravelly loam	ML, SM	A-2, A-4	0	0-5	70-90	60-75	40-60	30-55	15-25	NP-5
	30-48	Loam, gravelly loam, very gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0-10	40-95	35-90	25-80	15-60	15-25	NP-5
	48-60	Loam, gravelly loam, very gravelly sand	GM, GP-GM, ML, SM	A-1, A-2, A-3, A-4	0	0-15	30-95	25-90	15-75	5-55	15-25	NP-5
108:												
Dart----------	0-3	Loamy sand	SM	A-2	0	0	100	80-100	50-70	15-30	0-14	NP
	3-32	Loamy coarse sand, loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-65	15-30	0-14	NP
	32-60	Sand, loamy coarse sand, coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	45-70	0-10	0-14	NP
109:												
Dart----------	0-8	Loamy coarse sand	SM	A-2	0	0	100	80-100	50-70	15-30	0-14	NP
	8-16	Loamy coarse sand, loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-65	15-30	0-14	NP
	16-60	Sand, loamy coarse sand, coarse sand	SP, SP-SM	A-2, A-3, A-1	0	0	90-100	75-100	45-70	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
110:												
Dart	0-3	Loamy sand	SM	A-2	0	0	100	80-100	50-70	15-30	0-14	NP
	3-32	Loamy coarse sand, loamy sand	SM	A-1, A-2	0	0	90-100	75-100	40-65	15-30	0-14	NP
	32-60	Sand, loamy coarse sand, coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	45-70	0-10	0-14	NP
Springdale	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0-5	65-75	50-70	30-50	15-35	0-14	NP
	4-11	Gravelly coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-15	55-80	40-70	40-50	20-30	0-14	NP
	11-17	Very gravelly loamy coarse sand, gravelly sand, very gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-25	50-70	35-60	15-25	0-10	0-14	NP
	17-60	Very gravelly loamy coarse sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0	10-45	45-65	30-50	10-20	0-10	0-14	NP
111:												
Dart	0-5	Loamy sand	SM	A-2	0	0	100	80-100	50-70	15-30	0-14	NP
	5-60	Sand, loamy coarse sand, coarse sand	SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	45-70	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
111:												
Springdale------	0-4	Gravelly sandy loam	SM	A-2, A-1	0	0-5	65-75	50-70	30-50	15-35	0-14	NP
	4-11	Gravelly coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-15	55-80	40-70	40-50	20-30	0-14	NP
	11-17	Very gravelly loamy coarse sand, gravelly sand, very gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-25	50-70	35-60	15-25	0-10	0-14	NP
	17-60	Very gravelly loamy coarse sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0	10-45	45-65	30-50	10-20	0-10	0-14	NP
112:												
Dehart----------	0-7	Gravelly loam	ML	A-4	0	0	80-90	70-75	60-70	50-55	15-25	NP-5
	7-32	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	5-25	40-65	35-55	20-50	15-40	20-30	NP-5
	32-60	Very gravelly loam, very cobbly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	35-65	25-50	15-45	10-35	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
113:												
Dehart	0-7	Gravelly loam	ML	A-4	0	0	80-90	70-75	60-70	50-55	15-25	NP-5
	7-32	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	5-25	40-65	35-55	20-50	15-40	20-30	NP-5
	32-60	Very gravelly loam, very cobbly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	35-65	25-50	15-45	10-35	20-30	NP-5
114:												
Dehart	0-7	Gravelly loam	ML	A-4	0	0	80-90	70-75	60-70	50-55	15-25	NP-5
	7-32	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	5-25	40-65	35-55	20-50	15-40	20-30	NP-5
	32-60	Very gravelly loam, very cobbly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	35-65	25-50	15-45	10-35	20-30	NP-5
Phoebe	0-16	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	16-30	Gravelly fine sandy loam, sandy loam	SM	A-2, A-4	0	0	100	70-100	65-80	30-45	20-30	NP-5
	30-39	Gravelly sandy loam, fine sandy loam	SM	A-2, A-4	0	0	100	70-100	60-80	30-40	20-30	NP-5
	39-60	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-70	5-30	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
115:												
Dehart----------	0-8	Gravelly loam	ML	A-4	0	0	80-90	70-75	60-70	50-55	15-25	NP-5
	8-30	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	5-25	40-65	35-55	20-50	15-40	20-30	NP-5
	30-60	Very gravelly loam, very cobbly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	35-65	25-50	15-45	10-35	20-30	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
116:												
Dehart----------	0-8	Gravelly loam	ML	A-4	0	0	80-90	70-75	60-70	50-55	15-25	NP-5
	8-30	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	5-25	40-65	35-55	20-50	15-40	20-30	NP-5
	30-60	Very gravelly loam, very cobbly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	35-65	25-50	15-45	10-35	20-30	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
117:												
Dinkelman-------	0-13	Loam	ML, SM	A-4	0	0	90-100	75-90	65-85	45-65	20-30	NP-5
	13-39	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	0-20	80-95	60-80	25-50	20-40	20-30	NP-5
	39-43	Very gravelly coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-20	75-90	40-75	20-40	15-35	0-14	NP
	43-53	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
118:												
Dinkelman-------	0-13	Loam	ML, SM	A-4	0	0	90-100	75-90	65-85	45-65	20-30	NP-5
	13-39	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	0-20	80-95	60-80	25-50	20-40	20-30	NP-5
	39-43	Very gravelly coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-20	75-90	40-75	20-40	15-35	0-14	NP
	43-53	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
119:												
Dinkelman	0-10	Gravelly loam	SM	A-4	0	0-20	85-95	60-75	50-65	35-50	20-30	NP-5
	10-17	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	0-20	80-95	60-80	25-50	20-40	20-30	NP-5
	17-43	Very gravelly coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-20	75-90	40-75	20-40	15-35	0-14	NP
	43-53	Weathered bedrock			---	---	---	---	---	---	---	---
120:												
Disautel	0-15	Very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-95	50-65	15-25	NP-5
	15-32	Silt loam, very fine sandy loam, loam	ML	A-4	0	0-10	85-95	85-90	65-85	50-70	15-25	NP-5
	32-60	Very gravelly fine sandy loam, gravelly loam, cobbly fine sandy loam	GM, SM	A-2, A-4	0-15	10-30	55-85	50-80	40-70	25-50	15-25	NP-5
121:												
Disautel	0-15	Very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-95	50-65	15-25	NP-5
	15-32	Silt loam, very fine sandy loam, loam	ML	A-4	0	0-10	85-95	85-90	65-85	50-70	15-25	NP-5
	32-60	Very gravelly fine sandy loam, gravelly loam, cobbly fine sandy loam	GM, SM	A-2, A-4	0-15	10-30	55-85	50-80	40-70	25-50	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
122:												
Disautel	0-15	Very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-95	50-65	15-25	NP-5
	15-32	Silt loam, very fine sandy loam, loam	ML	A-4	0	0-10	85-95	85-90	65-85	50-70	15-25	NP-5
	32-60	Very gravelly fine sandy loam, gravelly loam, cobbly fine sandy loam	GM, SM	A-2, A-4	0-15	10-30	55-85	50-80	40-70	25-50	15-25	NP-5
Nespelem	0-12	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	12-22	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	50-90	20-30	NP-5
	22-24	Cemented			---	---	---	---	---	---	---	---
	24-60	Stratified very fine sandy loam to silty clay loam	ML	A-4	0	0	100	100	95-100	75-90	20-35	NP-10
123:												
Disautel	0-15	Very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-95	50-65	15-25	NP-5
	15-32	Silt loam, very fine sandy loam, loam	ML	A-4	0	0-10	85-95	85-90	65-85	50-70	15-25	NP-5
	32-60	Very gravelly fine sandy loam, gravelly loam, cobbly fine sandy loam	GM, SM	A-2, A-4	0	10-30	55-85	50-80	40-70	25-50	15-25	NP-5
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
124:												
Donavan	0-9	Sandy loam	SM	A-2	0	0-10	90-95	85-90	45-60	25-35	15-25	NP-5
	9-15	Sandy loam, loam	ML, SM	A-2, A-4	0	0-10	90-95	85-90	45-75	25-55	15-25	NP-5
	15-33	Loam, gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2, A-4	0	0-25	65-85	60-80	40-70	20-50	15-25	NP-5
	33-60	Gravelly sandy loam, cobbly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	10-25	70-80	65-75	35-55	20-40	0-20	NP-5
125:												
Donavan	0-9	Sandy loam	SM	A-2	0	0-10	90-95	85-90	45-60	25-35	15-25	NP-5
	9-15	Sandy loam, loam	ML, SM	A-2, A-4	0	0-10	90-95	85-90	45-75	25-55	15-25	NP-5
	15-33	Loam, gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2, A-4	0	0-25	65-85	60-80	40-70	20-50	15-25	NP-5
	33-60	Gravelly sandy loam, cobbly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	10-25	70-80	65-75	35-55	20-40	0-20	NP-5
126:												
Donavan	0-8	Bouldery sandy loam	SM	A-2	5-10	5-20	80-95	75-90	45-60	25-35	15-25	NP-5
	8-15	Sandy loam, loam	ML, SM	A-2, A-4	0	0-10	80-95	80-90	45-75	25-55	15-25	NP-5
	15-36	Sandy loam, gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0	5-25	70-85	65-80	35-55	20-35	15-25	NP-5
	36-60	Gravelly sandy loam, cobbly sandy loam, stony sandy loam	SM	A-1, A-2	0-10	10-25	65-80	60-75	35-50	20-30	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
127:												
Donavan	0-8	Bouldery sandy loam	SM	A-2	5-10	5-20	80-95	75-90	45-60	25-35	15-25	NP-5
	8-15	Sandy loam, loam	ML, SM	A-2, A-4	0	0-10	80-95	80-90	45-75	25-55	15-25	NP-5
	15-36	Sandy loam, gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0	5-25	70-85	65-80	35-55	20-35	15-25	NP-5
	36-60	Gravelly sandy loam, cobbly sandy loam, stony sandy loam	SM	A-1, A-2	0-10	10-25	65-80	60-75	35-50	20-30	15-25	NP-5
128:												
Donavan	0-11	Loam	ML	A-4	0	0-5	80-100	75-100	65-95	50-75	15-25	NP-5
	11-21	Gravelly loam, cobbly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-25	75-95	65-90	40-90	20-80	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly silt loam, cobbly loam	ML, SM	A-1, A-2, A-4	0	10-25	65-95	55-85	35-85	20-75	15-25	NP-5
129:												
Donavan	0-11	Loam	ML	A-4	0	0-5	80-100	75-100	65-95	50-75	15-25	NP-5
	11-21	Gravelly loam, cobbly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-25	75-95	65-90	40-90	20-80	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly silt loam, cobbly loam	ML, SM	A-1, A-2, A-4	0	10-25	65-95	55-85	35-85	20-75	15-25	NP-5
130:												
Donavan	0-11	Loam	ML	A-4	0	0-5	80-100	75-100	65-95	50-75	15-25	NP-5
	11-21	Gravelly loam, cobbly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-25	75-95	65-90	40-90	20-80	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly silt loam, cobbly loam	ML, SM	A-1, A-2, A-4	0	10-25	65-95	55-85	35-85	20-75	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
131:												
Donavan	0-5	Bouldery loam	ML, SM	A-4	5-10	0-5	80-90	75-85	45-80	40-75	20-30	NP-5
	5-21	Cobbly loam, gravelly sandy loam, loam	GM, SM	A-1, A-2, A-4	0	0-25	65-95	60-95	40-75	20-50	20-30	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, cobbly sandy loam	SM	A-1, A-2	0	0-25	70-90	65-85	35-55	20-30	20-25	NP-5
132:												
Donavan	0-5	Bouldery loam	ML, SM	A-4	5-10	0-5	80-90	75-85	45-80	40-75	20-30	NP-5
	5-21	Cobbly loam, gravelly sandy loam, loam	GM, SM	A-1, A-2, A-4	0	0-25	65-95	60-95	40-75	20-50	20-30	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, cobbly sandy loam	SM	A-1, A-2	0	0-25	70-90	65-85	35-55	20-30	20-25	NP-5
133:												
Donavan	0-11	Loam	ML	A-4	0	0-5	80-100	75-100	65-95	50-75	15-25	NP-5
	11-21	Gravelly loam, cobbly sandy loam, silt loam	ML, SM	A-1, A-2, A-4	0	0-25	75-95	65-90	40-90	20-80	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly silt loam, cobbly loam	ML, SM	A-1, A-2, A-4	0	10-25	65-95	55-85	35-85	20-75	15-25	NP-5
Goldlake	0-22	Silt loam	CL-ML	A-4	0	0	90-100	85-95	80-90	65-85	25-35	5-10
	22-29	Silt loam, loam, gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0-5	0-5	65-95	60-90	55-85	45-75	25-35	5-10
	29-40	Loam, gravelly loam, gravelly sandy loam	GM, SM	A-2, A-4	0-5	0-10	60-90	55-85	40-70	25-50	20-30	NP-5
	40-60	Gravelly loam, gravelly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2, A-4	0-5	10-30	45-75	40-70	25-55	15-40	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
134:												
Donavan	0-11	Loam	ML	A-4	0	0-5	80-100	75-100	65-95	50-75	15-25	NP-5
	11-21	Gravelly loam, cobbly sandy loam, silt loam	ML, SM	A-4, A-1, A-2	0	0-25	75-95	65-90	40-90	20-80	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly silt loam, cobbly loam	ML, SM	A-1, A-2, A-4	0	10-25	65-95	55-85	35-85	20-75	15-25	NP-5
Northstar	0-2	Gravelly loam	SM	A-2, A-4	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	2-18	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-1, A-2	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	18-27	Very gravelly loam, extremely gravelly sandy loam, extremely cobbly loam	GM	A-1	0-10	10-45	30-50	20-40	15-35	10-25	15-25	NP-5
	27-31	Unweathered bedrock			---	---	---	---	---	---	---	---
135:												
Donavan	0-8	Bouldery sandy loam	SM	A-2	5-10	5-20	80-95	75-90	45-60	25-35	15-25	NP-5
	8-15	Sandy loam, loam	ML, SM	A-2, A-4	0	0-10	80-95	80-90	45-75	25-55	15-25	NP-5
	15-36	Sandy loam, gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0	5-25	70-85	65-80	35-55	20-35	15-25	NP-5
	36-60	Gravelly sandy loam, cobbly sandy loam, stony sandy loam	SM	A-1, A-2	0-10	10-25	65-80	60-75	35-50	20-30	15-25	NP-5
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
136:												
Donavan	0-5	Bouldery loam	ML, SM	A-4	5-10	0-5	80-90	75-85	45-80	40-75	20-30	NP-5
	5-21	Cobbly loam, gravelly sandy loam, loam	GM, SM	A-1, A-2, A-4	0	0-25	65-95	60-95	40-75	20-50	20-30	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, cobbly sandy loam	SM	A-1, A-2	0	0-25	70-90	65-85	35-55	20-30	20-25	NP-5
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
137:												
Donavan	0-10	Bouldery loam	ML, SM	A-4	5-10	0-5	80-90	75-85	45-80	40-75	20-30	NP-5
	10-21	Cobbly loam, gravelly sandy loam, loam	GM, SM	A-1, A-2, A-4	0	0-25	65-95	60-95	40-75	20-50	20-30	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, cobbly sandy loam	SM	A-1, A-2	0	0-25	70-90	65-85	35-55	20-30	20-25	NP-5
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
138:												
Donavan	0-8	Bouldery sandy loam	SM	A-2	5-10	5-20	80-95	75-90	45-60	25-35	15-25	NP-5
	8-15	Sandy loam, loam	ML, SM	A-2, A-4	0	0-10	80-95	80-90	45-75	25-55	15-25	NP-5
	15-36	Sandy loam, gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0	5-25	70-85	65-80	35-55	20-35	15-25	NP-5
	36-60	Gravelly sandy loam, cobbly sandy loam, stony sandy loam	SM	A-1, A-2	0-10	10-25	65-80	60-75	35-50	20-30	15-25	NP-5
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
139:												
Duleylake	0-17	Loam	ML	A-4	0	0	100	95-100	80-95	60-75	20-30	NP-5
	17-31	Loam, sandy loam	ML, SM	A-2, A-4	0	0	95-100	90-100	60-85	30-60	20-25	NP-5
	31-37	Loam, clay loam	ML	A-6	0	0	95-100	90-100	75-95	55-80	35-40	10-15
	37-60	Silt loam, loam, sandy loam	ML, SM	A-4	0	0	95-100	90-100	60-90	35-75	20-25	NP-5
140:												
Elbowlake	0-2	Silt loam	ML	A-4	0	0	90-100	90-100	75-95	60-85	30-40	NP-5
	2-15	Silt loam	ML	A-4	0	0	90-100	85-95	75-95	60-85	30-40	NP-5
	15-20	Very gravelly loam, very channery loam, very channery sandy loam	GM	A-1, A-2, A-4	0-5	10-15	40-65	30-55	20-50	15-40	20-30	NP-5
	20-60	Very channery sandy loam, very gravelly loam, very channery loam	GM	A-1, A-2	0-5	10-15	40-55	30-45	20-45	15-35	20-30	NP-5
141:												
Elbowlake	0-2	Silt loam	ML	A-4	0	0	90-100	90-100	75-95	60-85	30-40	NP-5
	2-15	Silt loam	ML	A-4	0	0	90-100	85-95	75-95	60-85	30-40	NP-5
	15-20	Very gravelly loam, very channery loam, very channery sandy loam	GM	A-1, A-2, A-4	0-5	10-15	40-65	30-55	20-50	15-40	20-30	NP-5
	20-60	Very channery sandy loam, very gravelly loam, very channery loam	GM	A-1, A-2	0-5	10-15	40-55	30-45	20-45	15-35	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
142:												
Elbowlake-------	0-2	Silt loam	ML	A-4	0	0	90-100	90-100	75-95	60-85	30-40	NP-5
	2-15	Silt loam	ML	A-4	0	0	90-100	85-95	75-95	60-85	30-40	NP-5
	15-20	Very gravelly loam, very channery loam, very channery sandy loam	GM	A-1, A-2, A-4	0-5	10-15	40-65	30-55	20-50	15-40	20-30	NP-5
	20-60	Very channery sandy loam, very gravelly loam, very channery loam	GM	A-1, A-2	0-5	10-15	40-55	30-45	20-45	15-35	20-30	NP-5
143:												
Elbowlake-------	0-5	Silt loam	ML	A-4	0	0	90-100	90-100	75-95	60-85	30-40	NP-5
	5-20	Silt loam	ML	A-4	0	0	90-100	85-95	75-95	60-85	30-40	NP-5
	20-60	Very channery sandy loam, very gravelly loam, very channery loam	GM	A-1, A-2	0-5	10-15	40-55	30-45	20-45	15-35	20-30	NP-5
144:												
Elbowlake-------	0-5	Silt loam	ML	A-4	0	0	90-100	90-100	75-95	60-85	30-40	NP-5
	5-20	Silt loam	ML	A-4	0	0	90-100	85-95	75-95	60-85	30-40	NP-5
	20-60	Very channery sandy loam, very gravelly loam, very channery loam	GM	A-1, A-2	0-5	10-15	40-55	30-45	20-45	15-35	20-30	NP-5
145:												
Elbowlake-------	0-5	Silt loam	ML	A-4	0	0	90-100	90-100	75-95	60-85	30-40	NP-5
	5-20	Silt loam	ML	A-4	0	0	90-100	85-95	75-95	60-85	30-40	NP-5
	20-60	Very channery sandy loam, very gravelly loam, very channery loam	GM	A-1, A-2	0-5	10-15	40-55	30-45	20-45	15-35	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
146:												
Ellisforde------	0-12	Silt loam	ML	A-4	0	0	100	100	95-100	60-90	20-30	NP-5
	12-30	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	85-95	20-30	NP-5
	30-60	Stratified very fine sandy loam to silt loam	ML	A-4	0	0	100	100	95-100	85-95	20-30	NP-5
147:												
Ellisforde------	0-12	Silt loam	ML	A-4	0	0	100	100	95-100	60-90	20-30	NP-5
	12-30	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	85-95	20-30	NP-5
	30-60	Stratified very fine sandy loam to silt loam	ML	A-4	0	0	100	100	95-100	85-95	20-30	NP-5
148:												
Ellisforde------	0-12	Silt loam	ML	A-4	0	0	100	100	95-100	60-90	20-30	NP-5
	12-30	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	85-95	20-30	NP-5
	30-60	Stratified very fine sandy loam to silt loam	ML	A-4	0	0	100	100	95-100	85-95	20-30	NP-5
149:												
Elvedere--------	0-6	Silt loam	CL	A-6	0	0	100	95-100	95-100	80-90	20-30	10-15
	6-10	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	30-45	15-25
	10-60	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	90-100	80-95	30-45	15-25
150:												
Elvedere--------	0-6	Stony silt loam	CL	A-6	5-10	5-10	90-100	90-100	90-100	80-90	20-30	10-15
	6-10	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	30-45	15-25
	10-60	Silty clay loam, silty clay	CL	A-7, A-6	0	0	100	95-100	95-100	80-95	30-45	15-25

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
151:												
Elvedere	0-6	Stony silt loam	CL	A-6	5-10	5-10	90-100	90-100	90-100	80-90	20-30	10-15
	6-10	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	30-45	15-25
	10-60	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	95-100	80-95	30-45	15-25
152:												
Elvedere	0-6	Silt loam	CL	A-6	0	0	100	95-100	95-100	80-90	20-30	10-15
	6-10	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	30-45	15-25
	10-60	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	90-100	80-95	30-45	15-25
Leahy	0-3	Silt loam	CL	A-6	0	0	100	100	95-100	80-90	20-30	10-15
	3-10	Silty clay loam, silty clay	CL	A-7	0	0	100	100	95-100	85-95	40-50	15-25
	10-60	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	90-100	80-95	35-45	15-25
153:												
Emdent	0-18	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-40	NP-10
	18-60	Silt loam, very fine sandy loam, loam	ML	A-4	0	0	100	90-100	85-100	50-90	30-40	NP-10
154:												
Emdent	0-26	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-40	NP-10
	26-36	Silt loam, loam	ML	A-4	0	0	100	100	90-100	70-90	30-40	NP-10
	36-60	Silt loam, loam	ML	A-4	0	0	95-100	90-100	85-95	65-85	30-40	NP-10
155:												
Ewall	0-7	Coarse sand	SP, SP-SM	A-1	0	0	100	80-100	25-50	0-10	0-14	NP
	7-60	Coarse sand	SP, SP-SM	A-1	0	0	100	75-100	20-45	0-10	0-14	NP
156:												
Ewall	0-7	Coarse sand	SP, SP-SM	A-1	0	0	100	80-100	25-50	0-10	0-14	NP
	7-60	Coarse sand	SP, SP-SM	A-1	0	0	100	75-100	20-45	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
157:												
Ewall	0-13	Loamy fine sand	SM	A-2	0	0	100	100	75-85	15-30	0-14	NP
	13-38	Sand, loamy fine sand, fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-100	40-70	5-20	0-14	NP
	38-60	Loamy sand, sand, gravelly sand	SM, SP-SM	A-1, A-2, A-3	0	0-10	75-100	60-100	35-70	5-20	0-14	NP
158:												
Ewall	0-13	Loamy fine sand	SM	A-2	0	0	100	100	75-85	15-30	0-14	NP
	13-38	Sand, loamy fine sand, fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-100	40-70	5-20	0-14	NP
	38-60	Loamy sand, sand, gravelly sand	SM, SP-SM	A-1, A-2, A-3	0	0-10	75-100	60-100	35-70	5-20	0-14	NP
159:												
Ewall	0-7	Gravelly loamy sand	SM	A-1	0	0	60-85	50-75	30-50	10-20	0-14	NP
	7-60	Sand, gravelly loamy sand, gravelly sand	SM, SP-SM	A-1, A-2, A-3	0	0	75-100	65-100	40-70	5-20	0-14	NP
160:												
Farrell	0-10	Fine sandy loam	SM	A-4	0	0	95-100	90-100	65-85	35-50	15-25	NP-5
	10-22	Very fine sandy loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4	0	0	95-100	90-100	60-85	30-55	15-25	NP-5
	22-28	Very fine sandy loam, fine sandy loam, sandy loam	SM	A-2, A-4	0	0	95-100	90-100	60-85	30-50	15-25	NP-5
	28-60	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	90-100	85-100	55-80	30-50	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
161:												
Farrell	0-10	Fine sandy loam	SM	A-4	0	0	95-100	90-100	65-85	35-50	15-25	NP-5
	10-22	Very fine sandy loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4	0	0	95-100	90-100	60-85	30-55	15-25	NP-5
	22-28	Very fine sandy loam, fine sandy loam, sandy loam	SM	A-2, A-4	0	0	95-100	90-100	60-85	30-50	15-25	NP-5
	28-60	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	90-100	85-100	55-80	30-50	15-25	NP-5
162:												
Farrell	0-10	Fine sandy loam	SM	A-4	0	0	95-100	90-100	65-85	35-50	15-25	NP-5
	10-22	Very fine sandy loam, fine sandy loam, sandy loam	ML, SM	A-2, A-4	0	0	95-100	90-100	60-85	30-55	15-25	NP-5
	22-28	Very fine sandy loam, fine sandy loam, sandy loam	SM	A-2, A-4	0	0	95-100	90-100	60-85	30-50	15-25	NP-5
	28-60	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	90-100	85-100	55-80	30-50	15-25	NP-5
163:												
Farrell	0-8	Very bouldery fine sandy loam	SM	A-4	5-15	0-10	95-100	90-100	65-85	35-50	15-25	NP-5
	8-22	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	95-100	90-100	55-80	30-50	15-25	NP-5
	22-40	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0-10	90-100	85-100	50-75	30-50	15-25	NP-5
	40-60	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0-10	90-100	85-95	50-75	30-50	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
164:												
Fivelakes-------	0-10	Extremely bouldery sandy loam	SM	A-1, A-2	40-60	20-50	60-90	55-85	35-55	20-30	15-25	NP-5
	10-28	Very stony loam, very stony sandy loam, very gravelly sandy loam	GM	A-1, A-2	10-35	15-40	50-60	40-55	25-50	10-35	15-25	NP-5
	28-60	Very gravelly loamy coarse sand, extremely cobbly coarse sand, extremely gravelly coarse sand	GP	A-1	0-10	15-60	15-50	10-45	5-25	0-5	0-14	NP
165:												
Fivelakes-------	0-10	Fine sandy loam	SM	A-4	0	0	80-95	75-90	55-70	35-45	20-25	NP-5
	10-14	Gravelly fine sandy loam, gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	5-15	55-80	40-75	30-60	15-35	15-25	NP-5
	14-30	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	10-25	45-60	40-55	25-35	10-20	15-20	NP-5
	30-60	Extremely gravelly coarse sand, very gravelly sand, very gravelly loamy sand	GP, GP-GM	A-1	0	10-30	20-40	15-35	10-20	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
166:												
Fivelakes-------	0-4	Stony loam	ML, SM	A-4	5-15	5-20	70-100	65-100	55-90	40-65	20-25	NP-5
	4-12	Gravelly loam, gravelly sandy loam	ML, SM	A-2, A-4	0	5-30	75-90	70-85	45-75	25-60	15-25	NP-5
	12-20	Cobbly loam, very cobbly sandy loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	10-40	55-70	45-65	20-55	10-45	15-25	NP-5
	20-32	Very cobbly sandy loam, very cobbly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1	0	15-30	40-70	35-50	20-45	15-25	15-20	NP-5
	32-60	Extremely gravelly sand, extremely cobbly coarse sand, very gravelly loamy sand	GP, SP	A-1	0	10-45	30-55	20-45	10-25	0-5	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
167:												
Fivelakes-------	0-4	Stony loam	ML, SM	A-4	5-15	5-20	70-100	65-100	55-90	40-65	20-25	NP-5
	4-12	Gravelly loam, gravelly sandy loam	ML, SM	A-2, A-4	0	5-30	75-90	70-85	45-75	25-60	15-25	NP-5
	12-20	Cobbly loam, very cobbly sandy loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	10-40	55-70	45-65	20-55	10-45	15-25	NP-5
	20-32	Very cobbly sandy loam, very cobbly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1	0	15-30	40-70	35-50	20-45	15-25	15-20	NP-5
	32-60	Extremely gravelly sand, extremely cobbly coarse sand, very gravelly loamy sand	GP, SP	A-1	0	10-45	30-55	20-45	10-25	0-5	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
168:												
Fivelakes-------	0-4	Extremely bouldery loam	SM, GM, ML	A-4	40-60	20-50	60-90	55-85	50-75	40-60	20-25	NP-5
	4-12	Very bouldery loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	10-35	15-40	55-65	50-60	35-50	20-40	15-25	NP-5
	12-30	Very stony loam, very stony sandy loam, very gravelly sandy loam	GM	A-1, A-2	10-35	15-40	50-60	40-55	25-50	10-35	15-25	NP-5
	30-60	Very gravelly loamy coarse sand, extremely cobbly coarse sand, extremely gravelly coarse sand	GP	A-1	0-10	15-60	15-50	10-45	5-25	0-5	0-14	NP
169:												
Friedlander-----	0-3	Silt loam	ML	A-4	0	0	95-100	90-100	85-95	70-80	25-35	NP-5
	3-8	Silt loam	ML	A-4	0	0	95-100	90-100	85-95	70-80	25-35	NP-5
	8-23	Loam, very fine sandy loam	CL, SC	A-6	0	0	85-100	80-100	80-95	35-75	30-35	10-15
	23-60	Clay, clay loam, silty clay loam	CL	A-7	0	0	85-100	80-95	75-90	55-85	40-50	20-30
170:												
Friedlander-----	0-3	Silt loam	ML	A-4	0	0	95-100	90-100	85-95	70-80	25-35	NP-5
	3-8	Silt loam	ML	A-4	0	0	95-100	90-100	85-95	70-80	25-35	NP-5
	8-23	Loam, very fine sandy loam	CL, SC	A-6	0	0	85-100	80-100	80-95	35-75	30-35	10-15
	23-60	Clay, clay loam, silty clay loam	CL	A-7	0	0	85-100	80-95	75-90	55-85	40-50	20-30

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
171:												
Friedlander-----	0-3	Silt loam	ML	A-4	0	0	95-100	90-100	85-95	70-80	25-35	NP-5
	3-8	Silt loam	ML	A-4	0	0	95-100	90-100	85-95	70-80	25-35	NP-5
	8-23	Loam, very fine sandy loam	CL, SC	A-6	0	0	85-100	80-100	80-95	35-75	30-35	10-15
	23-60	Clay, clay loam, silty clay loam	CL	A-7	0	0	85-100	80-95	75-90	55-85	40-50	20-30
172:												
Garrison--------	0-12	Loam	ML	A-4	0	0	90-100	85-100	70-90	50-65	20-30	NP-5
	12-28	Very gravelly sandy loam, very gravelly loam, gravelly loam	GM, SM	A-1, A-2, A-4	0	0-15	45-75	40-70	25-60	15-45	20-25	NP-5
	28-60	Extremely gravelly coarse sand, very gravelly coarse sand, extremely cobbly loamy sand	GP, GP-GM	A-1	0-10	10-45	15-45	10-35	5-25	0-10	0-14	NP
173:												
Garrison--------	0-12	Loam	ML	A-4	0	0	90-100	85-100	70-90	50-65	20-30	NP-5
	12-28	Very gravelly sandy loam, very gravelly loam, gravelly loam	GM, SM	A-1, A-2, A-4	0	0-15	45-75	40-70	25-60	15-45	20-25	NP-5
	28-60	Extremely gravelly coarse sand, very gravelly coarse sand, extremely cobbly loamy sand	GP, GP-GM	A-1	0-10	10-45	15-45	10-35	5-25	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
174:												
Garrison--------	0-14	Gravelly loam	GM, SM	A-4	0	0-10	60-80	55-70	50-60	40-50	20-30	NP-5
	14-24	Very gravelly sandy loam, very gravelly loam, gravelly loam	GM, SM	A-1, A-2, A-4	0	0-15	45-75	40-70	25-60	15-45	20-25	NP-5
	24-60	Extremely gravelly coarse sand, very gravelly coarse sand, extremely cobbly loamy sand	GP, GP-GM	A-1	0-10	10-45	15-45	10-35	5-25	0-10	0-14	NP
175:												
Georgecreek-----	0-11	Silt loam	CL-ML	A-4	0	0	85-100	75-100	70-95	65-85	20-30	5-10
	11-19	Loam, silt loam	CL, CL-ML	A-4, A-6	0	0	85-100	75-100	70-90	50-75	25-35	5-15
	19-53	Clay loam, gravelly loam, sandy clay loam	CL, SC	A-6	0	0	80-100	65-100	60-85	45-70	30-40	10-20
	53-58	Loam, gravelly loam, sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-5	70-95	55-90	40-75	25-60	20-30	5-10
	58-68	Weathered bedrock			---	---	---	---	---	---	---	---
176:												
Georgecreek-----	0-11	Silt loam	CL-ML	A-4	0	0	85-100	75-100	70-95	65-85	20-30	5-10
	11-19	Loam, silt loam	CL, CL-ML	A-4, A-6	0	0	85-100	75-100	70-90	50-75	25-35	5-15
	19-53	Clay loam, gravelly loam, sandy clay loam	CL, SC	A-6	0	0	80-100	65-100	60-85	45-70	30-40	10-20
	53-58	Loam, gravelly loam, sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-5	70-95	55-90	40-75	25-60	20-30	5-10
	58-68	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
177:												
Georgecreek-----	0-8	Silt loam	CL-ML	A-4	0	0	85-100	75-100	70-95	65-85	20-30	5-10
	8-12	Loam, silt loam	CL, CL-ML	A-4, A-6	0	0	85-100	75-100	70-90	50-75	25-35	5-15
	12-55	Clay loam, gravelly loam, sandy clay loam	CL, SC	A-6	0	0	80-100	65-100	60-85	45-70	30-40	10-20
	55-65	Weathered bedrock			---	---	---	---	---	---	---	---
178:												
Georgecreek-----	0-8	Silt loam	CL-ML	A-4	0	0	85-100	75-100	70-95	65-85	20-30	5-10
	8-12	Loam, silt loam	CL, CL-ML	A-4, A-6	0	0	85-100	75-100	70-90	50-75	25-35	5-15
	12-55	Clay loam, gravelly loam, sandy clay loam	CL, SC	A-6	0	0	80-100	65-100	60-85	45-70	30-40	10-20
	55-65	Weathered bedrock			---	---	---	---	---	---	---	---
179:												
Ginnis----------	0-8	Stony sandy loam	SC-SM, SM	A-2, A-4	5-10	5-10	80-95	70-85	50-60	30-40	20-30	NP-10
	8-24	Coarse sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2	0	0	75-95	70-90	45-60	25-35	20-30	NP-10
	24-34	Weathered bedrock			---	---	---	---	---	---	---	---
180:												
Ginnis----------	0-10	Loam	CL-ML, ML	A-4	0	0	90-95	80-90	70-80	55-60	20-30	NP-10
	10-22	Loam, gravelly loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	75-90	60-85	55-75	30-55	20-30	NP-10
	22-31	Gravelly sandy loam, gravelly coarse sandy loam, gravelly loam	SC-SM, SM	A-1, A-2	0	0	70-85	50-75	35-50	15-25	20-30	NP-10
	31-41	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
181:												
Ginnis----------	0-18	Loam	CL-ML, ML	A-4	0	0	90-95	80-90	70-80	55-60	20-30	NP-10
	18-23	Loam, gravelly loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	75-90	60-85	55-75	30-55	20-30	NP-10
	23-33	Weathered bedrock			---	---	---	---	---	---	---	---
182:												
Ginnis----------	0-10	Loam	CL-ML, ML	A-4	0	0	90-95	80-90	70-80	55-60	20-30	NP-10
	10-22	Loam, gravelly loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	75-90	60-85	55-75	30-55	20-30	NP-10
	22-31	Gravelly sandy loam, gravelly coarse sandy loam, gravelly loam	SC-SM, SM	A-1, A-2	0	0	70-85	50-75	35-50	15-25	20-30	NP-10
	31-41	Weathered bedrock			---	---	---	---	---	---	---	---
Ginnis----------	0-18	Loam	CL-ML, ML	A-4	0	0	90-95	80-90	70-80	55-60	20-30	NP-10
	18-23	Loam, gravelly loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	75-90	60-85	55-75	30-55	20-30	NP-10
	23-33	Weathered bedrock			---	---	---	---	---	---	---	---
183:												
Ginnis----------	0-9	Cobbly loam	CL-ML, ML, SC-SM, SM	A-4	0	15-25	75-90	70-85	65-75	45-60	20-30	NP-10
	9-22	Gravelly sandy loam, cobbly sandy loam, loam	SC-SM, SM	A-2	0	0-30	80-90	70-85	50-60	25-30	20-30	NP-10
	22-32	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
183:												
Ginnis	0-12	Cobbly loam	CL-ML, ML, SC-SM, SM	A-4	0	15-25	75-90	70-85	65-75	45-60	20-30	NP-10
	12-19	Gravelly sandy loam, cobbly sandy loam, loam	SC-SM, SM	A-2	0	0-30	80-90	70-85	50-60	25-30	20-30	NP-10
	19-30	Coarse sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2	0	0	75-95	70-90	45-60	25-35	20-30	NP-10
	30-40	Weathered bedrock			---	---	---	---	---	---	---	---
184:												
Ginnis	0-10	Loam	CL-ML, ML	A-4	0	0	90-95	80-90	70-80	55-60	20-30	NP-10
	10-22	Loam, gravelly loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	75-90	60-85	55-75	30-55	20-30	NP-10
	22-31	Gravelly sandy loam, gravelly coarse sandy loam, gravelly loam	SC-SM, SM	A-1, A-2	0	0	70-85	50-75	35-50	15-25	20-30	NP-10
	31-41	Weathered bedrock			---	---	---	---	---	---	---	---
Conconully	0-13	Stony fine sandy loam	SM	A-4, A-2	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	13-33	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	33-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
185:												
Ginnis	0-10	Loam	CL-ML, ML	A-4	0	0	90-95	80-90	70-80	55-60	20-30	NP-10
	10-22	Loam, gravelly loam, sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	75-90	60-85	55-75	30-55	20-30	NP-10
	22-31	Gravelly sandy loam, gravelly coarse sandy loam, gravelly loam	SC-SM, SM	A-1, A-2	0	0	70-85	50-75	35-50	15-25	20-30	NP-10
	31-41	Weathered bedrock			---	---	---	---	---	---	---	---
Conconully	0-12	Stony fine sandy loam	SM	A-2, A-4	2-10	0-10	80-90	75-90	55-70	30-50	15-20	NP-5
	12-21	Gravelly sandy loam, gravelly fine sandy loam, fine sandy loam	SM	A-1, A-2, A-4	0-1	0-15	60-90	55-80	30-70	20-50	15-25	NP-5
	21-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-1	0-15	60-80	55-75	30-60	20-35	15-20	NP-5
186:												
Ginnis	0-8	Stony sandy loam	SC-SM, SM	A-2, A-4	0-10	5-10	80-95	70-85	50-60	30-40	20-30	NP-10
	8-24	Coarse sandy loam, sandy loam, gravelly sandy loam	SC-SM, SM	A-2	0	0	75-95	70-90	45-60	25-35	20-30	NP-10
	24-34	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
187:												
Glenrose	0-16	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	70-90	25-35	5-15
	16-27	Silt loam, gravelly silt loam, loam	CL, CL-ML	A-4, A-6	0	0	75-100	70-95	65-90	55-85	25-35	5-15
	27-60	Silt loam, loam, gravelly loam	CL	A-6	0	0	90-100	70-100	65-95	50-85	25-35	10-15
188:												
Glenrose	0-16	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	70-90	25-35	5-15
	16-27	Silt loam, gravelly silt loam, loam	CL, CL-ML	A-4, A-6	0	0	75-100	70-95	65-90	55-85	25-35	5-15
	27-60	Silt loam, loam, gravelly loam	CL	A-6	0	0	90-100	70-100	65-95	50-85	25-35	10-15
189:												
Goddard	0-3	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-80	20-25	NP-5
	3-10	Silt loam, sandy loam, gravelly silt loam	ML, SM	A-4	0	0	85-100	70-100	65-95	35-80	20-25	NP-5
	10-18	Gravelly sandy loam, cobbly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-15	65-80	60-75	40-50	20-30	15-20	NP-5
	18-60	Very gravelly coarse sand, very gravelly loamy sand, extremely gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	15-25	35-65	25-60	10-40	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
190:												
Goddard	0-3	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-80	20-25	NP-5
	3-10	Silt loam, sandy loam, gravelly silt loam	ML, SM	A-4	0	0	85-100	70-100	65-95	35-80	20-25	NP-5
	10-18	Gravelly sandy loam, cobbly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-15	65-80	60-75	40-50	20-30	15-20	NP-5
	18-60	Very gravelly coarse sand, very gravelly loamy sand, extremely gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	15-25	35-65	25-60	10-40	0-10	0-14	NP
191:												
Goddard	0-3	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-80	20-25	NP-5
	3-10	Silt loam, sandy loam, gravelly silt loam	ML, SM	A-4	0	0	85-100	70-100	65-95	35-80	20-25	NP-5
	10-18	Gravelly sandy loam, cobbly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-15	65-80	60-75	40-50	20-30	15-20	NP-5
	18-60	Very gravelly coarse sand, very gravelly loamy sand, extremely gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	15-25	35-65	25-60	10-40	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
192:												
Goldlake	0-22	Silt loam	CL-ML	A-4	0	0	90-100	85-95	80-90	65-85	25-35	5-10
	22-29	Silt loam, loam, gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0-5	0-5	65-95	60-90	55-85	45-75	25-35	5-10
	29-40	Loam, gravelly loam, gravelly sandy loam	GM, SM	A-2, A-4	0-5	0-10	60-90	55-85	40-70	25-50	20-30	NP-5
	40-60	Gravelly loam, gravelly coarse sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2, A-4	0-5	10-30	45-75	40-70	25-55	15-40	20-30	NP-5
193:												
Gooseflats	0-7	Fine sandy loam	SM	A-4	0	0	100	95-100	95-100	35-40	15-25	NP-5
	7-41	Loamy fine sand, fine sand	SM	A-2	0	0	100	90-100	70-85	20-30	0-15	NP
	41-48	Cemented			---	---	---	---	---	---	---	---
	48-60	Loamy fine sand, fine sand	SM	A-2	0	0	100	90-100	70-80	20-30	0-14	NP
Gooseflats	0-7	Fine sandy loam	SM	A-4	0	0	100	90-100	70-85	35-40	15-25	NP-5
	7-28	Loamy fine sand	SM	A-2	0	0	100	90-100	70-80	20-35	0-14	NP
	28-60	Loamy fine sand, fine sand	SM	A-2	0	0	100	90-100	70-80	20-30	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
194:												
Growden	0-4	Channery silt loam	ML, GM	A-4	0	0-10	65-80	60-75	55-75	45-70	25-35	NP-5
	4-10	Flaggy silt loam, channery silt loam	GM, ML, SM	A-4	0	10-25	70-85	65-75	50-75	40-70	25-35	NP-5
	10-22	Very channery silt loam, very flaggy silt loam, very channery loam	GM	A-1, A-2, A-4	0-10	15-40	50-75	40-55	20-50	15-50	15-20	NP-5
	22-60	Extremely flaggy sandy loam, extremely channery loam, very channery sandy loam	GM, GP-GM	A-1, A-2	25-35	20-50	25-65	10-55	10-45	5-35	15-20	NP-5
195:												
Hadencreek	0-13	Silt loam	CL	A-6	0	0	100	90-100	85-95	75-85	25-30	10-15
	13-32	Silt loam	CL	A-6	0	0	100	90-100	90-100	85-90	30-35	10-15
	32-60	Stratified very fine sandy loam to silty clay loam	CL	A-6	0	0	100	95-100	90-95	50-90	30-40	15-20
196:												
Haley	0-12	Fine sandy loam	ML, SM	A-4	0	0	100	90-100	70-90	40-55	0-14	NP
	12-28	Fine sandy loam	ML, SM	A-4	0	0	90-100	90-100	70-90	40-55	0-14	NP
	28-40	Sand, loamy sand, loamy fine sand	SP, SP-SM	A-2, A-3, A-1	0	0	100	90-100	40-60	0-10	0-14	NP
	40-60	Coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-60	0-10	0-14	NP
197:												
Haley	0-12	Fine sandy loam	ML, SM	A-4	0	0	100	90-100	70-90	40-55	0-14	NP
	12-28	Fine sandy loam	ML, SM	A-4	0	0	90-100	90-100	70-90	40-55	0-14	NP
	28-40	Sand, loamy sand, loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	0	100	90-100	40-60	0-10	0-14	NP
	40-60	Coarse sand, sand	SP, SP-SM	A-3, A-2, A-1	0	0	80-100	75-100	40-60	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
198:												
Haley	0-12	Fine sandy loam	ML, SM	A-4	0	0	100	90-100	70-90	40-55	0-14	NP
	12-28	Fine sandy loam	ML, SM	A-4	0	0	90-100	90-100	70-90	40-55	0-14	NP
	28-40	Sand, loamy sand, loamy fine sand	SP, SP-SM	A-1, A-2, A-3	0	0	100	90-100	40-60	0-10	0-14	NP
	40-60	Coarse sand, sand	SP, SP-SM	A-2, A-1, A-3	0	0	80-100	75-100	40-60	0-10	0-14	NP
199:												
Hallcreek	0-11	Loam	ML	A-4	0	0	90-100	75-90	75-85	50-70	25-35	NP-5
	11-17	Gravelly sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	10-15	55-75	45-65	20-35	15-25	0-14	NP
	17-60	Extremely gravelly sand, extremely gravelly coarse sand, extremely cobbly sand	GP	A-1	0-10	35-45	25-50	10-35	5-20	0-5	0-14	NP
200:												
Haploxerolls	0-3	Gravelly sandy loam	SM	A-1, A-2, A-4	0-5	0-20	70-95	65-80	40-60	20-40	15-25	NP-5
	3-11	Very gravelly sandy loam	GM, SM	A-1, A-2	0-5	10-25	50-70	35-60	25-40	10-30	15-25	NP-5
	11-60	Very gravelly sand, very gravelly loamy sand, gravelly sand	GM, GP, ML, SM	A-6, A-4, A-2, A-1	0-5	0-30	45-95	35-85	10-80	0-75	15-40	NP-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
201:												
Hartill	0-6	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	50-80	30-40	NP-5
	6-14	Silt loam, loam	ML	A-4	0	0	85-100	75-90	65-85	50-75	30-40	NP-5
	14-30	Very channery sandy loam, very channery loam, very flaggy loam	GM	A-1, A-2, A-4	10-25	5-35	40-65	35-55	25-50	15-40	15-25	NP-5
	30-39	Extremely flaggy sandy loam, extremely flaggy loam, very channery sandy loam	GM	A-1, A-2	25-35	15-30	30-60	20-50	15-45	10-35	15-25	NP-5
	39-43	Unweathered bedrock			---	---	---	---	---	---	---	---
202:												
Hartill	0-6	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	50-80	30-40	NP-5
	6-14	Silt loam, loam	ML	A-4	0	0	85-100	75-90	65-85	50-75	30-40	NP-5
	14-30	Very channery sandy loam, very channery loam, very flaggy loam	GM	A-4, A-2, A-1	10-25	5-35	40-65	35-55	25-50	15-40	15-25	NP-5
	30-39	Extremely flaggy sandy loam, extremely flaggy loam, very channery sandy loam	GM	A-2, A-1	25-35	15-30	30-60	20-50	15-45	10-35	15-25	NP-5
	39-43	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
203:												
Hellgate--------	0-12	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	75-100	55-75	35-45	20-30	15-25	NP-5
	12-25	Sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SM	A-4, A-2	0	0-10	75-95	55-85	35-60	25-40	15-25	NP-5
	25-36	Gravelly coarse sandy loam, gravelly loamy coarse sand, very gravelly loamy coarse sand	SM	A-1	0	0-10	60-85	45-65	20-40	10-25	15-20	NP-5
	36-60	Gravelly loamy coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand	GP-GM, SP-SM	A-1	0	0-10	45-75	35-60	15-30	5-10	0-14	NP
204:												
Hellgate--------	0-9	Gravelly loam	SM	A-2, A-4	0	0	75-100	55-75	40-60	30-45	25-35	NP-5
	9-22	Sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SM	A-2, A-4	0	0-10	75-95	55-85	35-60	25-40	15-25	NP-5
	22-50	Gravelly coarse sandy loam, gravelly loamy coarse sand, very gravelly loamy coarse sand	SM	A-1	0	0-10	60-85	45-65	20-40	10-25	15-20	NP-5
	50-60	Gravelly loamy coarse sand, very gravelly loamy coarse sand, very gravelly coarse sand	GP-GM, SP-SM	A-1	0	0-10	45-75	35-60	15-30	5-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
205:												
Henneway---------	0-10	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	55-75	30-40	NP-5
	10-28	Silt loam, loam	CL-ML	A-4	0	0	95-100	85-100	80-95	60-85	20-30	5-10
	28-49	Silty clay loam, channery silty clay loam, channery loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	70-100	60-100	55-95	35-85	25-35	5-15
	49-59	Channery silt loam, channery loam, channery clay loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0	65-80	50-70	45-65	35-60	25-35	5-15
	59-63	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
206:												
Henneway---------	0-10	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	55-75	30-40	NP-5
	10-28	Silt loam, loam	CL-ML	A-4	0	0	95-100	85-100	80-95	60-85	20-30	5-10
	28-49	Silty clay loam, channery silty clay loam, channery loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	70-100	60-100	55-95	35-85	25-35	5-15
	49-59	Channery silt loam, channery loam, channery clay loam	CL, CL-ML, GC, GC-GM	A-4, A-6	0	0	65-80	50-70	45-65	35-60	25-35	5-15
	59-63	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
207:												
Henneway---------	0-13	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	55-75	30-40	NP-5
	13-22	Silt loam, loam	CL-ML	A-4	0	0	95-100	85-100	80-95	60-85	20-30	5-10
	22-45	Silty clay loam, channery silty clay loam, channery loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	70-100	60-100	55-95	35-85	25-35	5-15
	45-58	Channery silt loam, channery loam, channery clay loam	GC, GC-GM, CL, CL-ML	A-4, A-6	0	0	65-80	50-70	45-65	35-60	25-35	5-15
	58-62	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
208:												
Heytou----------	0-4	Stony loam	GM, ML, SM	A-4	2-10	0-5	60-85	55-80	45-70	35-55	20-30	NP-5
	4-30	Gravelly sandy loam, very gravelly loam, very cobbly loam	GM	A-2, A-4	0-5	15-30	45-70	40-65	35-55	25-45	20-30	NP-5
	30-60	Very gravelly sandy loam, very cobbly loam, very gravelly loam	GM	A-1, A-2, A-4	0-5	20-40	50-65	40-60	25-50	15-40	20-30	NP-5
Stubblefield----	0-9	Stony loam	ML, SM	A-4	5-10	5-10	75-90	65-80	55-75	40-60	20-30	NP-5
	9-24	Very gravelly loam, very gravelly sandy loam, very cobbly fine sandy loam	GM, SM	A-1, A-2, A-4	0-15	5-20	45-70	35-60	25-50	15-40	20-30	NP-5
	24-28	Cemented			---	---	---	---	---	---	---	---
	28-60	Gravelly fine sandy loam, very gravelly fine sandy loam, very cobbly sandy loam	GC-GM, GM, ML, SM	A-2, A-4	0-10	10-45	50-80	45-75	35-65	25-55	20-30	NP-10
209:												
Histosols-------	0-4	Mucky peat	PT	A-8	0	0	---	---	---	---	---	---
	4-20	Mucky peat, muck, peat	PT	A-8	0	0	---	---	---	---	---	---
	20-32	Silt loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	70-80	25-40	5-20
	32-60	Silt loam, fine sandy loam, very gravelly sand	SM, ML, GP-GM, CL-ML	A-1, A-2, A-3, A-4	0	0-10	45-100	35-100	20-95	5-80	15-30	NP-10

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
210:												
Hobohill	0-3	Sandy loam	SM	A-2, A-4	0	0-5	90-100	80-100	50-70	30-45	15-20	NP-5
	3-18	Sandy loam, gravelly sandy loam	SM	A-1, A-2	0	0	75-85	60-80	40-60	20-40	15-20	NP-5
	18-30	Sand, gravelly loamy sand, gravelly loamy coarse sand	SP-SM, SM	A-1	0	0-10	70-85	60-80	30-50	5-20	0-14	NP
	30-60	Gravelly loamy coarse sand, gravelly sand, very gravelly coarse sand	SP, SP-SM	A-1	0	0-10	55-70	45-65	20-40	0-10	0-14	NP
211:												
Hobohill	0-3	Stony sandy loam	SM	A-2	5-10	5-10	80-100	70-90	45-60	25-35	15-20	NP-5
	3-14	Sandy loam, gravelly sandy loam	SM	A-1, A-2	0	0	75-95	60-80	40-60	20-35	15-20	NP-5
	14-23	Sandy loam, gravelly loamy sand, gravelly loamy coarse sand	SM	A-1	0	0-15	70-95	60-85	30-50	10-25	0-14	NP-5
	23-60	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1	0	0-10	60-85	50-75	20-40	5-15	0-14	NP
212:												
Hodgson	0-3	Silt loam	ML	A-4	0	0	100	100	90-100	80-95	30-40	NP-5
	3-47	Clay loam, silty clay loam, silty clay	CL	A-7	0	0	100	95-100	90-100	70-85	40-50	15-25
	47-60	Silt loam, silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	90-100	75-85	35-50	15-25

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
213:												
Hodgson	0-3	Silt loam	ML	A-4	0	0	100	100	90-100	80-95	30-40	NP-5
	3-47	Clay loam, silty clay loam, silty clay	CL	A-7	0	0	100	95-100	90-100	70-85	40-50	15-25
	47-60	Silt loam, silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	90-100	75-85	35-50	15-25
214:												
Hodgson	0-3	Silt loam	ML	A-4	0	0	100	100	90-100	80-95	30-40	NP-5
	3-47	Clay loam, silty clay loam, silty clay	CL	A-7	0	0	100	95-100	90-100	70-85	40-50	15-25
	47-60	Silt loam, silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	90-100	75-85	35-50	15-25
215:												
Hodgson	0-3	Silt loam	ML	A-4	0	0	100	100	90-100	80-95	30-40	NP-5
	3-47	Clay loam, silty clay loam, silty clay	CL	A-7	0	0	100	95-100	90-100	70-85	40-50	15-25
	47-60	Silt loam, silty clay loam, silty clay	CL	A-6, A-7	0	0	100	95-100	90-100	75-85	35-50	15-25
216:												
Hudnut	0-2	Gravelly sandy loam	SM	A-2	0	0-10	70-80	65-75	40-60	25-40	20-25	NP-5
	2-50	Gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0	0-15	70-80	60-75	35-55	15-35	20-25	NP-5
	50-60	Very gravelly loamy sand, very cobbly loamy sand, gravelly sand	GP-GM, GM, SM, SP-SM	A-1, A-2, A-3	0	0-40	50-85	45-75	25-55	5-20	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
217:												
Hudnut	0-2	Gravelly sandy loam	SM	A-2	0	0-10	70-80	65-75	40-60	25-40	20-25	NP-5
	2-50	Gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0	0-15	70-80	60-75	35-55	15-35	20-25	NP-5
	50-60	Very gravelly loamy sand, very cobbly loamy sand, gravelly sand	SP-SM, SM, GP-GM, GM	A-1, A-2, A-3	0	0-40	50-85	45-75	25-55	5-20	0-14	NP
218:												
Hunters	0-10	Silt loam	ML	A-4	0	0	100	95-100	95-100	75-90	25-35	NP-5
	10-28	Silt loam	ML	A-4, A-6	0	0	100	95-100	95-100	75-85	30-40	5-15
	28-60	Silt loam	ML	A-4, A-6	0	0	100	95-100	95-100	75-90	30-40	5-15
219:												
Hunters	0-14	Silt loam	ML	A-4	0	0	100	95-100	95-100	75-90	25-35	NP-5
	14-24	Silt loam	ML	A-4, A-6	0	0	100	95-100	95-100	75-85	30-40	5-15
	24-60	Silt loam	ML	A-4, A-6	0	0	100	95-100	95-100	75-90	30-40	5-15
220:												
Inchelium	0-13	Silt loam	ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-5
	13-42	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	85-100	55-90	20-30	NP-5
	42-51	Silt loam, very fine sandy loam	ML, CL	A-4, A-6	0	0	100	100	90-100	80-90	30-40	5-15
	51-60	Silt loam, silty clay loam	ML, CL	A-4, A-6	0	0	100	100	90-100	80-90	30-40	5-15
221:												
Inchelium	0-13	Silt loam	ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-5
	13-42	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	85-100	55-90	20-30	NP-5
	42-51	Silt loam, very fine sandy loam	ML, CL	A-4, A-6	0	0	100	100	90-100	80-90	30-40	5-15
	51-60	Silt loam, silty clay loam	CL, ML	A-4, A-6	0	0	100	100	90-100	80-90	30-40	5-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
222:												
Inkler----------	0-3	Gravelly silt loam	SM, GM	A-2, A-4	0	0	55-80	50-75	40-55	30-40	25-35	NP-5
	3-9	Loam, gravelly silt loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-80	60-80	35-65	20-50	25-35	NP-5
	9-18	Gravelly loam, very cobbly loam, very gravelly sandy loam	SM, GM	A-1, A-2	0-10	0-30	50-70	40-60	30-50	20-35	20-30	NP-5
	18-31	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM, SM	A-1, A-2	0-10	10-45	50-70	40-55	25-50	10-35	15-25	NP-5
	31-60	Very cobbly loam, very gravelly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	40-65	30-55	20-45	10-30	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
223:												
Inkler----------	0-3	Gravelly silt loam	GM, SM	A-2, A-4	0	0	55-80	50-75	40-55	30-40	25-35	NP-5
	3-9	Loam, gravelly silt loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-80	60-80	35-65	20-50	25-35	NP-5
	9-18	Gravelly loam, very cobbly loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-10	0-30	50-70	40-60	30-50	20-35	20-30	NP-5
	18-31	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM, SM	A-1, A-2	0-10	10-45	50-70	40-55	25-50	10-35	15-25	NP-5
	31-60	Very cobbly loam, very gravelly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	40-65	30-55	20-45	10-30	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
224:												
Inkler	0-3	Gravelly silt loam	GM, SM	A-2, A-4	0	0	55-80	50-75	40-55	30-40	25-35	NP-5
	3-9	Loam, gravelly silt loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-80	60-80	35-65	20-50	25-35	NP-5
	9-18	Gravelly loam, very cobbly loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-10	0-30	50-70	40-60	30-50	20-35	20-30	NP-5
	18-31	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM, SM	A-1, A-2	0-10	10-45	50-70	40-55	25-50	10-35	15-25	NP-5
	31-60	Very cobbly loam, very gravelly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	40-65	30-55	20-45	10-30	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
225:												
Inkler----------	0-3	Gravelly silt loam	GM, SM	A-2, A-4	0	0	55-80	50-75	40-55	30-40	25-35	NP-5
	3-9	Loam, gravelly silt loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-80	60-80	35-65	20-50	25-35	NP-5
	9-18	Gravelly loam, very cobbly loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-10	0-30	50-70	40-60	30-50	20-35	20-30	NP-5
	18-31	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM, SM	A-1, A-2	0-10	10-45	50-70	40-55	25-50	10-35	15-25	NP-5
	31-60	Very cobbly loam, very gravelly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	40-65	30-55	20-45	10-30	15-25	NP-5
Baldknob---------	0-4	Very stony loam	CL-ML, GC-GM, GM, ML	A-4	10-25	10-20	60-90	55-85	50-80	35-60	20-30	NP-10
	4-14	Very gravelly loam, extremely gravelly loam, very cobbly loam	GC-GM, GM	A-1, A-2, A-4	0-10	10-30	35-65	25-55	20-50	15-40	20-30	NP-10
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
226:												
Inkler	0-3	Gravelly silt loam	GM, SM	A-2, A-4	0	0	55-80	50-75	40-55	30-40	25-35	NP-5
	3-9	Loam, gravelly silt loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-80	60-80	35-65	20-50	25-35	NP-5
	9-18	Gravelly loam, very cobbly loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-10	0-30	50-70	40-60	30-50	20-35	20-30	NP-5
	18-31	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM, SM	A-1, A-2	0-10	10-45	50-70	40-55	25-50	10-35	15-25	NP-5
	31-60	Very cobbly loam, very gravelly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	40-65	30-55	20-45	10-30	15-25	NP-5
Baldknob	0-4	Very stony loam	CL-ML, GC-GM, GM, ML	A-4	10-25	10-20	60-90	55-85	50-80	35-60	20-30	NP-10
	4-14	Very gravelly loam, extremely gravelly loam, very cobbly loam	GC-GM, GM	A-1, A-2, A-4	0-10	10-30	35-65	25-55	20-50	15-40	20-30	NP-10
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
227:												
Inkler----------	0-3	Gravelly silt loam	GM, SM	A-2, A-4	0	0	55-80	50-75	40-55	30-40	25-35	NP-5
	3-9	Loam, gravelly silt loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-80	60-80	35-65	20-50	25-35	NP-5
	9-18	Gravelly loam, very cobbly loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-10	0-30	50-70	40-60	30-50	20-35	20-30	NP-5
	18-31	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM, SM	A-1, A-2	0-10	10-45	50-70	40-55	25-50	10-35	15-25	NP-5
	31-60	Very cobbly loam, very gravelly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	40-65	30-55	20-45	10-30	15-25	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
228:												
Inkler	0-3	Gravelly silt loam	GM, SM	A-2, A-4	0	0	55-80	50-75	40-55	30-40	25-35	NP-5
	3-9	Loam, gravelly silt loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-80	60-80	35-65	20-50	25-35	NP-5
	9-18	Gravelly loam, very cobbly loam, very gravelly sandy loam	GM, SM	A-1, A-2	0-10	0-30	50-70	40-60	30-50	20-35	20-30	NP-5
	18-31	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM, SM	A-1, A-2	0-10	10-45	50-70	40-55	25-50	10-35	15-25	NP-5
	31-60	Very cobbly loam, very gravelly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	40-65	30-55	20-45	10-30	15-25	NP-5
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
229:												
Jimcreek	0-19	Silt loam	ML	A-4	0	0	100	100	90-100	75-85	30-40	NP-5
	19-46	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	35-45	15-20
	46-60	Silty clay loam, silty clay	CL	A-7	0	0	95-100	90-100	90-100	80-90	40-50	20-30

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
230:												
Johntom	0-4	Stony loam	GM, SM	A-4	5-15	5-30	65-85	55-75	50-65	35-50	15-20	NP-5
	4-11	Very gravelly loam, extremely gravelly sandy loam, very gravelly sandy loam	GM	A-1, A-2	0	10-30	40-60	30-50	30-45	15-35	15-25	NP-5
	11-16	Very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly coarse sandy loam	GM, GP-GM	A-1	0	10-30	25-40	15-40	10-25	5-15	15-25	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Rubble land	0-60	Fragmental material			---	---	---	---	---	---	---	---
231:												
Karamin	0-6	Fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	65-85	40-55	15-20	NP-5
	6-18	Fine sandy loam, sandy loam, loam	ML, SM	A-4	0	0	95-100	90-100	60-85	35-65	15-20	NP-5
	18-28	Loamy fine sand, loamy sand, sand	SM	A-1, A-2	0	0	90-100	85-100	45-85	20-30	0-14	NP
	28-60	Fine sand, sand, loamy sand	SM, SP-SM	A-3, A-1, A-2	0	0-10	90-100	85-100	45-80	5-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
232:												
Karamin	0-6	Fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	65-85	40-55	15-20	NP-5
	6-18	Fine sandy loam, sandy loam, loam	ML, SM	A-4	0	0	95-100	90-100	60-85	35-65	15-20	NP-5
	18-28	Loamy fine sand, loamy sand, sand	SM	A-1, A-2	0	0	90-100	85-100	45-85	20-30	0-14	NP
	28-60	Fine sand, sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0	0-10	90-100	85-100	45-80	5-25	0-14	NP
233:												
Karamin	0-6	Fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	65-85	40-55	15-20	NP-5
	6-18	Fine sandy loam, sandy loam, loam	ML, SM	A-4	0	0	95-100	90-100	60-85	35-65	15-20	NP-5
	18-28	Loamy fine sand, loamy sand, sand	SM	A-2, A-1	0	0	90-100	85-100	45-85	20-30	0-14	NP
	28-60	Fine sand, sand, loamy sand	SM, SP-SM	A-3, A-2, A-1	0	0-10	90-100	85-100	45-80	5-25	0-14	NP
234:												
Kartar	0-6	Sandy loam	SM	A-2	0	0	90-100	85-95	50-60	25-35	0-14	NP
	6-22	Sandy loam, gravelly sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0	0-10	70-95	60-90	40-60	10-35	15-20	NP-5
	22-42	Gravelly loamy sand, cobbly loamy sand, gravelly sand	SM, SP-SM	A-1	0	0-20	70-80	60-75	20-35	5-15	0-14	NP
	42-60	Fine sand, gravelly sand, gravelly coarse sand	SM, SP, SP-SM	A-3, A-1, A-2	0	0-20	60-95	55-90	30-60	0-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
235:												
Kellerbutte-----	0-5	Silt loam	ML	A-4	0	0-5	80-100	75-100	60-95	50-75	30-40	NP-5
	5-17	Silt loam, loam, gravelly silt loam	GM, ML, SM	A-4	0	0-15	60-90	55-90	50-80	35-65	30-40	NP-5
	17-60	Very cobbly loam, very gravelly sandy loam, very gravelly coarse sandy loam	SM, GM	A-2, A-1	0-15	10-35	40-85	35-50	20-45	10-35	15-20	NP-5
236:												
Kellerbutte-----	0-7	Silt loam	ML	A-4	0	0-5	80-100	75-100	60-95	50-75	30-40	NP-5
	7-17	Silt loam, loam, gravelly silt loam	GM, ML, SM	A-4	0	0-15	60-90	55-90	50-80	35-65	30-40	NP-5
	17-60	Very cobbly loam, very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1, A-2	0-15	10-35	40-85	35-50	20-45	10-35	15-20	NP-5
237:												
Kenotrail-------	0-9	Silt loam	CL-ML	A-4	0	0	80-95	75-90	70-85	65-80	20-25	5-10
	9-32	Gravelly silty clay loam, gravelly loam, gravelly clay loam	CL, GC	A-6	0	0	55-80	50-75	45-70	35-65	30-35	10-15
	32-42	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
238:												
Kewach	0-4	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	4-10	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	10-29	Silt loam, silty clay loam	CL	A-7, A-6	0	0	100	100	90-100	85-95	30-45	15-25
	29-42	Silty clay, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	75-95	30-45	15-25
	42-60	Silty clay loam, silty clay, silt loam	CL	A-7, A-6	0	0	95-100	90-100	80-100	75-95	30-45	15-25
239:												
Kewach	0-4	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	4-10	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	10-29	Silt loam, silty clay loam	CL	A-7, A-6	0	0	100	100	90-100	85-95	30-45	15-25
	29-42	Silty clay, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	75-95	30-45	15-25
	42-60	Silty clay loam, silty clay, silt loam	CL	A-7, A-6	0	0	95-100	90-100	80-100	75-95	30-45	15-25
240:												
Kewach	0-4	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	4-10	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	10-29	Silt loam, silty clay loam	CL	A-7, A-6	0	0	100	100	90-100	85-95	30-45	15-25
	29-42	Silty clay, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	75-95	30-45	15-25
	42-60	Silty clay loam, silty clay, silt loam	CL	A-7, A-6	0	0	95-100	90-100	80-100	75-95	30-45	15-25

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
241:												
Kewach	0-4	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	4-10	Silt loam	ML	A-4	0	0	100	100	90-100	85-90	20-30	NP-5
	10-29	Silt loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-95	30-45	15-25
	29-42	Silty clay, silty clay loam	CL	A-7, A-6	0	0	95-100	90-100	85-100	75-95	30-45	15-25
	42-60	Silty clay loam, silty clay, silt loam	CL	A-7, A-6	0	0	95-100	90-100	80-100	75-95	30-45	15-25
242:												
Kiehl	0-10	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	55-80	30-40	NP-5
	10-21	Very gravelly sandy loam, gravelly sandy loam	GM, SM	A-2, A-1	0	0-10	55-80	45-70	30-50	15-30	20-30	NP-5
	21-29	Extremely gravelly loamy coarse sand, gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0	15-30	25-65	15-45	5-30	0-15	0-14	NP
	29-60	Very gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-5	15-30	25-65	15-45	5-30	0-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
243:												
Kiehl	0-10	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	55-80	30-40	NP-5
	10-21	Very gravelly sandy loam, gravelly sandy loam	GM, SM	A-1, A-2	0	0-10	55-80	45-70	30-50	15-30	20-30	NP-5
	21-29	Extremely gravelly loamy coarse sand, gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0	15-30	25-65	15-45	5-30	0-15	0-14	NP
	29-60	Very gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-5	15-30	25-65	15-45	5-30	0-15	0-14	NP
244:												
Kiehl	0-10	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	55-80	30-40	NP-5
	10-21	Very gravelly sandy loam, gravelly sandy loam	GM, SM	A-1, A-2	0	0-10	55-80	45-70	30-50	15-30	20-30	NP-5
	21-29	Extremely gravelly loamy coarse sand, gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0	15-30	25-65	15-45	5-30	0-15	0-14	NP
	29-60	Very gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-5	15-30	25-65	15-45	5-30	0-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
245:												
Kiehl	0-14	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	55-80	30-40	NP-5
	14-23	Extremely gravelly loamy coarse sand, gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0	15-30	25-65	15-45	5-30	0-15	0-14	NP
	23-60	Very gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-5	15-30	25-65	15-45	5-30	0-15	0-14	NP
246:												
Kiehl	0-14	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	55-80	30-40	NP-5
	14-23	Extremely gravelly loamy coarse sand, gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0	15-30	25-65	15-45	5-30	0-15	0-14	NP
	23-60	Very gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-5	15-30	25-65	15-45	5-30	0-15	0-14	NP
247:												
Kiehl	0-14	Silt loam	ML	A-4	0	0	85-100	75-90	70-90	55-80	30-40	NP-5
	14-23	Extremely gravelly loamy coarse sand, gravelly loamy coarse sand	SP, SM, GP, GM	A-1	0	15-30	25-65	15-45	5-30	0-15	0-14	NP
	23-60	Very gravelly loamy sand, extremely gravelly coarse sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-5	15-30	25-65	15-45	5-30	0-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
248:												
Koepke	0-22	Loam	ML	A-4	0	0	90-100	85-100	80-90	65-80	30-40	NP-5
	22-40	Gravelly sandy loam, gravelly loam	SM	A-4, A-1, A-2	0	0-10	70-85	60-75	45-50	20-45	0-14	NP
	40-60	Very gravelly sandy loam, very cobbly sandy loam	GM	A-1	0	10-40	30-45	25-40	15-25	10-20	0-14	NP
249:												
Lakesol	0-10	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	5-10
	10-37	Silt loam	CL-ML	A-4	0	0	90-100	90-100	90-100	75-90	20-30	5-10
	37-60	Silt loam	CL-ML	A-4	0	0	100	90-100	90-100	75-90	20-30	5-10
250:												
Lithic Xerorthents	0-2	Gravelly loam	SM	A-4	0-15	0-30	70-80	55-75	45-60	35-50	15-25	NP-5
	2-7	Gravelly loam, very gravelly loam, very cobbly loam	GM	A-1, A-2	0-20	0-35	50-65	40-55	30-45	20-30	15-25	NP-5
	7-11	Unweathered bedrock			---	---	---	---	---	---	---	---
Baldknob	0-4	Very stony loam	CL-ML, GC-GM, GM, ML	A-4	10-25	10-20	60-90	55-85	50-80	35-60	20-30	NP-10
	4-14	Very gravelly loam, extremely gravelly loam, very cobbly loam	GC-GM, GM	A-4, A-2, A-1	0-10	10-30	35-65	25-55	20-50	15-40	20-30	NP-10
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
251:												
Lithic Xerorthents----	0-2	Gravelly loam	SM	A-4	0-15	0-30	70-80	55-75	45-60	35-50	15-25	NP-5
	2-7	Gravelly loam, very gravelly loam, very cobbly loam	GM	A-2, A-1	0-20	0-35	50-65	40-55	30-45	20-30	15-25	NP-5
	7-11	Unweathered bedrock			---	---	---	---	---	---	---	---
Baldknob--------	0-4	Very stony loam	CL-ML, GC-GM, GM, ML	A-4	10-25	10-20	60-90	55-85	50-80	35-60	20-30	NP-10
	4-14	Very gravelly loam, extremely gravelly loam, very cobbly loam	GC-GM, GM	A-1, A-2, A-4	0-10	10-30	35-65	25-55	20-50	15-40	20-30	NP-10
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
252:												
Logy----------	0-10	Very stony sandy loam	SM	A-2, A-1	10-20	15-25	65-85	55-75	35-50	20-30	20-25	NP-5
	10-24	Very gravelly sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-25	35-55	25-45	15-30	10-20	20-25	NP-5
	24-60	Extremely gravelly loamy sand, extremely gravelly sand, very gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0-5	10-35	30-55	20-50	10-30	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
253:												
Loony	0-3	Loam	ML	A-4	0	0	95-100	85-100	70-95	60-80	20-30	NP-5
	3-17	Loam	ML	A-4	0	0	95-100	85-100	70-95	50-75	20-30	NP-5
	17-28	Cobbly sandy loam, gravelly sandy loam	SM	A-1, A-2	0	5-20	70-95	65-90	40-65	20-35	15-25	NP-5
	28-60	Sandy loam, loam	SM	A-1, A-2	0	0-5	85-100	75-100	65-90	50-70	20-30	NP-5
254:												
Lostcreek	0-11	Loam	ML	A-4	0	0	85-100	75-100	65-90	50-70	20-30	NP-5
	11-27	Loam, fine sandy loam, gravelly sandy loam	ML, SM	A-4, A-2	0	0-5	80-100	70-100	50-85	30-65	20-30	NP-5
	27-60	Fine sandy loam, gravelly loam, gravelly sandy loam	ML, SM	A-4, A-2, A-1	0	0-10	70-90	60-85	40-75	20-60	15-25	NP-5
255:												
Louiecreek	0-13	Gravelly loam	GM, ML, SM	A-4	0	0-10	60-80	55-75	50-70	35-55	15-25	NP-5
	13-20	Gravelly loam, very gravelly loam, very cobbly sandy loam	GM	A-4, A-2, A-1	0-10	10-45	35-65	30-60	20-50	15-40	15-25	NP-5
	20-32	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1, A-2	0-10	15-50	35-55	30-50	20-45	15-35	15-25	NP-5
	32-60	Extremely gravelly loam, very gravelly sandy loam, extremely cobbly sandy loam	GM	A-1, A-2	0-10	15-55	25-45	20-45	15-40	10-30	0-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
256:												
Louploup--------	0-6	Silt loam	ML	A-4	0	0	90-100	80-100	70-95	50-80	30-40	NP-5
	6-22	Silt loam, loam, fine sandy loam	ML, SM	A-4	0	0	80-100	75-100	60-90	35-70	25-35	NP-5
	22-46	Fine sandy loam, sandy loam, gravelly coarse sandy loam	SM	A-2, A-1	0	0-10	70-95	60-90	35-70	20-35	15-20	NP-5
	46-60	Gravelly sandy loam, gravelly coarse sandy loam, very gravelly loamy sand	SM	A-1	0-10	0-15	60-80	50-75	30-45	10-25	0-14	NP
257:												
Louploup--------	0-6	Silt loam	ML	A-4	0	0	90-100	80-100	70-95	50-80	30-40	NP-5
	6-22	Silt loam, loam, fine sandy loam	ML, SM	A-4	0	0	80-100	75-100	60-90	35-70	25-35	NP-5
	22-46	Fine sandy loam, sandy loam, gravelly coarse sandy loam	SM	A-2, A-1	0	0-10	70-95	60-90	35-70	20-35	15-20	NP-5
	46-60	Gravelly sandy loam, gravelly coarse sandy loam, very gravelly loamy sand	SM	A-1	0-10	0-15	60-80	50-75	30-45	10-25	0-14	NP
258:												
Lynxcreek-------	0-9	Silt loam	ML	A-4	0	0	100	90-100	80-100	75-90	30-40	NP-5
	9-36	Silt loam, silty clay loam	CL	A-7, A-6	0	0-10	90-100	85-100	75-95	65-90	25-45	15-25
	36-60	Silty clay loam, loam, silt loam	CL	A-6, A-7	0	0-10	85-100	75-100	70-90	65-85	25-45	15-25

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
259:												
Malott	0-12	Very fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	80-90	40-55	20-25	NP-5
	12-36	Very fine sandy loam, loam, gravelly fine sandy loam	ML, SM	A-4, A-2	0	0-15	75-100	70-100	65-85	30-60	20-25	NP-5
	36-49	Gravelly loam, cobbly loam, gravelly sandy loam	SM	A-2, A-4	0-5	0-25	80-90	65-80	50-75	25-50	15-25	NP-5
	49-60	Cemented			---	---	---	---	---	---	---	---
260:												
Malott	0-12	Very fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	80-90	40-55	20-25	NP-5
	12-36	Very fine sandy loam, loam, gravelly fine sandy loam	ML, SM	A-2, A-4	0	0-15	75-100	70-100	65-85	30-60	20-25	NP-5
	36-49	Gravelly loam, cobbly loam, gravelly sandy loam	SM	A-2, A-4	0-5	0-25	80-90	65-80	50-75	25-50	15-25	NP-5
	49-60	Cemented			---	---	---	---	---	---	---	---
261:												
Malott	0-12	Very fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	80-90	40-55	20-25	NP-5
	12-36	Very fine sandy loam, loam, gravelly fine sandy loam	ML, SM	A-4, A-2	0	0-15	75-100	70-100	65-85	30-60	20-25	NP-5
	36-49	Gravelly loam, cobbly loam, gravelly sandy loam	SM	A-2, A-4	0-5	0-25	80-90	65-80	50-75	25-50	15-25	NP-5
	49-60	Cemented			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
262:												
Malott	0-6	Stony very fine sandy loam	SM	A-4	0-10	5-10	90-95	85-95	60-80	35-50	20-25	NP-5
	6-11	Very fine sandy loam, fine sandy loam	SM	A-4	0	0-10	95-100	85-100	70-85	40-50	20-25	NP-5
	11-30	Cobbly fine sandy loam, gravelly fine sandy loam, sandy loam	SM	A-2, A-4	0-10	0-15	80-90	70-85	60-70	30-45	20-25	NP-5
	30-53	Gravelly fine sandy loam, gravelly sandy loam, very cobbly sandy loam	SM	A-4, A-2, A-1	0-10	5-30	75-85	55-75	40-60	20-40	15-25	NP-5
	53-60	Cemented			---	---	---	---	---	---	---	---
263:												
Malott	0-6	Stony very fine sandy loam	SM	A-4	0-10	5-10	90-95	85-95	60-80	35-50	20-25	NP-5
	6-11	Very fine sandy loam, fine sandy loam	SM	A-4	0	0-10	95-100	85-100	70-85	40-50	20-25	NP-5
	11-30	Cobbly fine sandy loam, gravelly fine sandy loam, sandy loam	SM	A-2, A-4	0-10	0-15	80-90	70-85	60-70	30-45	20-25	NP-5
	30-53	Gravelly fine sandy loam, gravelly sandy loam, very cobbly sandy loam	SM	A-1, A-2, A-4	0-10	5-30	75-85	55-75	40-60	20-40	15-25	NP-5
	53-60	Cemented			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
264:												
Malott	0-6	Stony very fine sandy loam	SM	A-4	0-10	5-10	90-95	85-95	60-80	35-50	20-25	NP-5
	6-11	Very fine sandy loam, fine sandy loam	SM	A-4	0	0-10	95-100	85-100	70-85	40-50	20-25	NP-5
	11-30	Cobbly fine sandy loam, gravelly fine sandy loam, sandy loam	SM	A-4, A-2	0-10	0-15	80-90	70-85	60-70	30-45	20-25	NP-5
	30-53	Gravelly fine sandy loam, gravelly sandy loam, very cobbly sandy loam	SM	A-4, A-2, A-1	0-10	5-30	75-85	55-75	40-60	20-40	15-25	NP-5
	53-60	Cemented			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
265:												
Malott	0-6	Stony very fine sandy loam	SM	A-4	0-10	5-10	90-95	85-95	60-80	35-50	20-25	NP-5
	6-11	Very fine sandy loam, fine sandy loam	SM	A-4	0	0-10	95-100	85-100	70-85	40-50	20-25	NP-5
	11-30	Cobbly fine sandy loam, gravelly fine sandy loam, sandy loam	SM	A-4, A-2	0-10	0-15	80-90	70-85	60-70	30-45	20-25	NP-5
	30-53	Gravelly fine sandy loam, gravelly sandy loam, very cobbly sandy loam	SM	A-1, A-4, A-2	0-10	5-30	75-85	55-75	40-60	20-40	15-25	NP-5
	53-60	Cemented			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
266:												
Malott	0-6	Stony very fine sandy loam	SM	A-4	0-10	5-10	90-95	85-95	60-80	35-50	20-25	NP-5
	6-11	Very fine sandy loam, fine sandy loam	SM	A-4	0	0-10	95-100	85-100	70-85	40-50	20-25	NP-5
	11-30	Cobbly fine sandy loam, gravelly fine sandy loam, sandy loam	SM	A-2, A-4	0-10	0-15	80-90	70-85	60-70	30-45	20-25	NP-5
	30-53	Gravelly fine sandy loam, gravelly sandy loam, very cobbly sandy loam	SM	A-4, A-1, A-2	0-10	5-30	75-85	55-75	40-60	20-40	15-25	NP-5
	53-60	Cemented			---	---	---	---	---	---	---	---
Torriorthents	0-6	Stony loam	SM	A-4	5-10	5-15	70-85	60-75	55-70	35-50	15-25	NP-5
	6-60	Gravelly sandy loam, very gravelly loam, very cobbly fine sandy loam	GM, SM	A-2, A-1, A-4	0-10	10-25	50-75	40-65	25-55	15-45	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
267:												
Manley----------	0-12	Silt loam	ML	A-4	0	0	90-100	85-100	85-100	80-95	30-40	NP-10
	12-17	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0-10	80-100	70-100	60-95	40-85	20-40	NP-10
	17-38	Very gravelly sandy loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	15-45	5-35	0-14	NP
	38-60	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam, very cobbly loamy sand	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	10-35	0-25	0-14	NP
268:												
Manley----------	0-12	Silt loam	ML	A-4	0	0	90-100	85-100	85-100	80-95	30-40	NP-10
	12-17	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0-10	80-100	70-100	60-95	40-85	20-40	NP-10
	17-38	Very gravelly sandy loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	15-45	5-35	0-14	NP
	38-60	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam, very cobbly loamy sand	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	10-35	0-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
269:												
Manley----------	0-12	Silt loam	ML	A-4	0	0	90-100	85-100	85-100	80-95	30-40	NP-10
	12-17	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0-10	80-100	70-100	60-95	40-85	20-40	NP-10
	17-38	Very gravelly sandy loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	15-45	5-35	0-14	NP
	38-60	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam, very cobbly loamy sand	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	10-35	0-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
270:												
Manley----------	0-12	Silt loam	ML	A-4	0	0	90-100	85-100	85-100	80-95	30-40	NP-10
	12-17	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0-10	80-100	70-100	60-95	40-85	20-40	NP-10
	17-38	Very gravelly sandy loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	15-45	5-35	0-14	NP
	38-60	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam, very cobbly loamy sand	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	10-35	0-25	0-14	NP
Codylake--------	0-5	Loam	ML	A-4	0	0	95-100	85-100	80-95	60-75	30-40	NP-5
	5-24	Loam, gravelly fine sandy loam, gravelly sandy loam	ML, SM	A-4	0	0	85-100	70-100	50-95	35-65	30-40	NP-5
	24-43	Gravelly sandy loam, gravelly coarse sandy loam, sandy loam	SM	A-1, A-2	0	0-10	70-95	55-85	35-60	20-35	15-20	NP-5
	43-53	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
271:												
Manley----------	0-12	Silt loam	ML	A-4	0	0	90-100	85-100	85-100	80-95	30-40	NP-10
	12-17	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0-10	80-100	70-100	60-95	40-85	20-40	NP-10
	17-38	Very gravelly sandy loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	15-45	5-35	0-14	NP
	38-60	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam, very cobbly loamy sand	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	10-35	0-25	0-14	NP
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
272:												
Manley	0-12	Silt loam	ML	A-4	0	0	90-100	85-100	85-100	80-95	30-40	NP-10
	12-17	Silt loam, loam, gravelly fine sandy loam	ML, SM	A-4	0	0-10	80-100	70-100	60-95	40-85	20-40	NP-10
	17-38	Very gravelly sandy loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	15-45	5-35	0-14	NP
	38-60	Very gravelly loamy coarse sand, extremely gravelly coarse sandy loam, very cobbly loamy sand	GM, GP-GM, SM, SP-SM	A-1	0-5	10-40	35-65	25-55	10-35	0-25	0-14	NP
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
273:												
Martella	0-3	Silt loam	ML	A-4	0	0	95-100	85-100	75-95	60-85	25-40	NP-10
	3-23	Silt loam, loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	85-95	45-85	20-40	NP-10
	23-46	Silt loam, very fine sandy loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	90-100	90-95	80-90	25-40	5-15
	46-60	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	90-100	90-95	80-90	25-40	5-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
274:												
Martella	0-10	Silt loam	ML	A-4	0	0	95-100	85-100	75-95	60-85	25-40	NP-10
	10-46	Silt loam, very fine sandy loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	90-100	90-95	80-90	25-40	5-15
	46-60	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	90-100	90-95	80-90	25-40	5-15
275:												
Martella	0-10	Silt loam	ML	A-4	0	0	95-100	85-100	75-95	60-85	25-40	NP-10
	10-46	Silt loam, very fine sandy loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	90-100	90-95	80-90	25-40	5-15
	46-60	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	90-100	90-95	80-90	25-40	5-15
276:												
Medisaprists	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
	10-60	Muck	PT	A-8	0	0	---	---	---	---	---	---
277:												
Merkel	0-6	Sandy loam	SM	A-2	0	0-5	90-100	80-95	50-60	25-35	20-30	NP-5
	6-29	Sandy loam, gravelly sandy loam	SM	A-2, A-1	0	0-15	70-90	60-80	40-55	20-35	20-30	NP-5
	29-35	Very cobbly sandy loam, very gravelly sandy loam	SM	A-1, A-2	0-5	20-35	65-75	40-60	35-45	15-30	20-30	NP-5
	35-60	Very cobbly sandy loam, very cobbly loamy coarse sand, very gravelly coarse sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	20-35	45-65	40-60	20-35	5-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
278:												
Merkel	0-6	Sandy loam	SM	A-2	0	0-5	90-100	80-95	50-60	25-35	20-30	NP-5
	6-29	Sandy loam, gravelly sandy loam	SM	A-1, A-2	0	0-15	70-90	60-80	40-55	20-35	20-30	NP-5
	29-35	Very cobbly sandy loam, very gravelly sandy loam	SM	A-1, A-2	0-5	20-35	65-75	40-60	35-45	15-30	20-30	NP-5
	35-60	Very cobbly sandy loam, very cobbly loamy coarse sand, very gravelly coarse sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	20-35	45-65	40-60	20-35	5-15	0-14	NP
279:												
Merkel	0-6	Sandy loam	SM	A-2	0	0-5	90-100	80-95	50-60	25-35	20-30	NP-5
	6-29	Sandy loam, gravelly sandy loam	SM	A-2, A-1	0	0-15	70-90	60-80	40-55	20-35	20-30	NP-5
	29-35	Very cobbly sandy loam, very gravelly sandy loam	SM	A-2, A-1	0-5	20-35	65-75	40-60	35-45	15-30	20-30	NP-5
	35-60	Very cobbly sandy loam, very cobbly loamy coarse sand, very gravelly coarse sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-5	20-35	45-65	40-60	20-35	5-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
280:												
Merkel	0-3	Bouldery fine sandy loam	SM	A-4, A-2	2-10	0-10	65-90	60-85	45-65	30-45	20-25	NP-5
	3-21	Stony sandy loam, gravelly fine sandy loam	SM	A-2, A-1	0-10	10-25	75-85	70-80	30-60	10-35	20-25	NP-5
	21-60	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0-5	25-40	50-70	45-65	20-40	10-15	15-25	NP-5
281:												
Merkel	0-3	Bouldery fine sandy loam	SM	A-2, A-4	5-10	0-10	65-90	60-85	45-65	30-45	20-25	NP-5
	3-21	Stony sandy loam, gravelly fine sandy loam	SM	A-1, A-2	0-10	10-25	75-85	70-80	30-60	10-35	20-25	NP-5
	21-60	Very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0-5	25-40	50-70	45-65	20-40	10-15	15-25	NP-5
282:												
Mineral	0-6	Stony loam	GM, SM	A-4	5-10	5-10	55-80	50-75	45-65	35-50	20-30	NP-5
	6-12	Very gravelly loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM	A-2, A-4, A-1	0-5	0-45	55-75	40-65	35-65	20-50	20-30	NP-5
	12-23	Very cobbly sandy loam, very stony sandy loam, very cobbly loam	SM	A-1, A-2	0-25	15-30	60-80	50-75	40-50	15-30	15-20	NP-5
	23-27	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
283:												
Mineral	0-6	Stony loam	GM, SM	A-4	5-10	5-10	55-80	50-75	45-65	35-50	20-30	NP-5
	6-12	Very gravelly loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2, A-4	0-5	0-45	55-75	40-65	35-65	20-50	20-30	NP-5
	12-23	Very cobbly sandy loam, very stony sandy loam, very cobbly loam	SM	A-1, A-2	0-25	15-30	60-80	50-75	40-50	15-30	15-20	NP-5
	23-27	Unweathered bedrock			---	---	---	---	---	---	---	---
284:												
Mineral	0-6	Stony loam	GM, SM	A-4	5-10	5-10	55-80	50-75	45-65	35-50	20-30	NP-5
	6-12	Very gravelly loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-4, A-2	0-5	0-45	55-75	40-65	35-65	20-50	20-30	NP-5
	12-23	Very cobbly sandy loam, very stony sandy loam, very cobbly loam	SM	A-2, A-1	0-25	15-30	60-80	50-75	40-50	15-30	15-20	NP-5
	23-27	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
285:												
Mineral---------	0-6	Stony loam	GM, SM	A-4	5-10	5-10	55-80	50-75	45-65	35-50	20-30	NP-5
	6-12	Very gravelly loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2, A-4	0-5	0-45	55-75	40-65	35-65	20-50	20-30	NP-5
	12-23	Very cobbly sandy loam, very stony sandy loam, very cobbly loam	SM	A-1, A-2	0-25	15-30	60-80	50-75	40-50	15-30	15-20	NP-5
	23-27	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
286:												
Mineral---------	0-6	Stony loam	GM, SM	A-4	5-10	5-10	55-80	50-75	45-65	35-50	20-30	NP-5
	6-12	Very gravelly loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2, A-4	0-5	0-45	55-75	40-65	35-65	20-50	20-30	NP-5
	12-23	Very cobbly sandy loam, very stony sandy loam, very cobbly loam	SM	A-2, A-1	0-25	15-30	60-80	50-75	40-50	15-30	15-20	NP-5
	23-27	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
287:												
Mineral	0-8	Stony loam	GM, SM	A-4	5-10	5-10	55-80	50-75	45-65	35-50	20-30	NP-5
	8-23	Very gravelly loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2, A-4	0-5	0-45	55-75	40-65	35-65	20-50	20-30	NP-5
	23-27	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
288:												
Mitchellpoint	0-7	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	60-70	30-40	NP-5
	7-14	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	60-70	25-35	NP-5
	14-20	Silt loam, cobbly loam, gravelly sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-10	85-100	70-100	55-95	35-85	25-35	5-15
	20-26	Silt loam, cobbly silt loam, gravelly loam	CL	A-6	0	0-25	85-95	75-90	70-85	65-75	25-35	10-15
	26-60	Stratified very gravelly coarse sand to very cobbly loamy coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-10	10-30	40-60	30-50	15-25	0-10	0-14	NP
289:												
Monse	0-14	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	5-10
	14-19	Silt loam	CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	5-10
	19-40	Silt loam, silty clay loam	CL	A-6	0	0	100	100	90-100	80-95	25-35	10-15
	40-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	90-100	80-95	25-35	10-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
290:												
Morical	0-13	Silt loam	ML	A-4	0	0-5	95-100	90-100	80-95	60-80	20-35	NP-10
	13-22	Silt loam, loam, gravelly loam	CL, SC	A-6	0	0	90-100	60-90	55-80	40-70	30-40	10-20
	22-32	Weathered bedrock			---	---	---	---	---	---	---	---
291:												
Morical	0-13	Silt loam	ML	A-4	0	0-5	95-100	90-100	80-95	60-80	20-35	NP-10
	13-22	Silt loam, loam, gravelly loam	CL, SC	A-6	0	0	90-100	60-90	55-80	40-70	30-40	10-20
	22-32	Weathered bedrock			---	---	---	---	---	---	---	---
292:												
Morical	0-17	Silt loam	ML	A-4	0	0-5	95-100	90-100	80-95	60-80	20-35	NP-10
	17-33	Silt loam, loam, gravelly loam	CL, SC	A-6	0	0	90-100	60-90	55-80	40-70	30-40	10-20
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
293:												
Moscow	0-3	Silt loam	ML	A-4	0	0	90-100	90-100	85-95	70-80	25-40	NP-10
	3-11	Loam, silt loam	ML	A-4	0	0	90-100	75-100	60-90	50-80	25-40	NP-10
	11-34	Gravelly coarse sandy loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0-5	80-100	55-75	45-60	20-40	15-20	NP-5
	34-44	Weathered bedrock			---	---	---	---	---	---	---	---
294:												
Moscow	0-11	Silt loam	ML	A-4	0	0	90-100	90-100	85-95	70-80	25-40	NP-10
	11-34	Gravelly coarse sandy loam, gravelly sandy loam	SM	A-2, A-4, A-1	0	0-5	80-100	55-75	45-60	20-40	15-20	NP-5
	34-44	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
295:												
Moses	0-13	Silt loam	ML	A-4	0	0-5	90-100	85-100	75-90	60-80	30-40	NP-10
	13-20	Gravelly coarse sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0-15	65-80	35-65	15-40	10-25	10-20	NP-5
	20-34	Very gravelly sandy loam, very gravelly coarse sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-45	50-75	35-55	15-40	10-25	10-20	NP-5
	34-44	Weathered bedrock			---	---	---	---	---	---	---	---
296:												
Moses	0-13	Silt loam	ML	A-4	0	0-5	90-100	85-100	75-100	60-80	30-40	NP-10
	13-20	Gravelly coarse sandy loam, very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0-15	65-80	35-65	15-40	10-25	10-20	NP-5
	20-34	Very gravelly sandy loam, very gravelly coarse sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-45	50-75	35-55	15-40	10-25	10-20	NP-5
	34-44	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
297:												
Moses	0-8	Extremely bouldery silt loam	GM	A-2, A-4	25-35	10-40	40-55	35-50	30-45	25-40	30-40	NP-5
	8-22	Very stony sandy loam, very gravelly coarse sandy loam, gravelly coarse sandy loam	GM, SM	A-1	10-25	10-30	45-80	45-75	25-35	15-25	15-20	NP-5
	22-30	Very gravelly coarse sandy loam, very cobbly coarse sandy loam, very gravelly loamy coarse sand	GM, SM	A-1	0-10	20-40	50-65	40-50	20-30	15-25	15-20	NP-5
	30-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
298:												
Moses	0-8	Extremely bouldery silt loam	GM	A-4, A-2	25-35	10-40	40-55	35-50	30-45	25-40	30-40	NP-5
	8-22	Very stony sandy loam, very gravelly coarse sandy loam, gravelly coarse sandy loam	GM, SM	A-1	10-25	10-30	45-80	45-75	25-35	15-25	15-20	NP-5
	22-30	Very gravelly coarse sandy loam, very cobbly coarse sandy loam, very gravelly loamy coarse sand	GM, SM	A-1	0-10	20-40	50-65	40-50	20-30	15-25	15-20	NP-5
	30-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
299:												
Narcisse	0-25	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	60-80	20-30	NP-5
	25-42	Silt loam, loam, fine sandy loam	ML, SM	A-4	0	0	80-100	75-100	55-95	35-80	20-30	NP-5
	42-60	Stratified gravelly loamy coarse sand to silt loam	ML, SM	A-1, A-2, A-4	0	0-15	65-100	55-100	30-80	10-60	15-25	NP-5
300:												
Narcisse	0-21	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	60-80	20-30	NP-5
	21-31	Silt loam, loam, fine sandy loam	ML, SM	A-4	0	0	80-100	75-100	55-95	35-80	20-30	NP-5
	31-46	Silt loam, loam, sandy loam	ML, SM	A-2, A-4	0	0	80-100	75-100	45-95	25-80	20-30	NP-5
	46-60	Stratified gravelly loamy coarse sand to silt loam	ML, SM	A-2, A-4, A-1	0	0-15	65-100	55-100	30-80	10-60	15-25	NP-5
301:												
Nespelem	0-12	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	12-22	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	50-90	20-30	NP-5
	22-24	Cemented			---	---	---	---	---	---	---	---
	24-60	Stratified very fine sandy loam to silty clay loam	ML	A-4	0	0	100	100	95-100	75-90	20-35	NP-10
302:												
Nespelem	0-19	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	19-30	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	50-90	20-30	NP-5
	30-32	Cemented			---	---	---	---	---	---	---	---
	32-60	Stratified very fine sandy loam to silty clay loam	ML	A-4	0	0	100	100	95-100	75-90	20-35	NP-10

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
302:												
Nespelem	0-8	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	8-36	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	50-90	20-30	NP-5
	36-38	Cemented			---	---	---	---	---	---	---	---
	38-60	Stratified very fine sandy loam to silty clay loam	ML	A-4	0	0	100	100	95-100	75-90	20-35	NP-10
303:												
Nespelem	0-12	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	12-22	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	50-90	20-30	NP-5
	22-24	Cemented			---	---	---	---	---	---	---	---
	24-60	Stratified very fine sandy loam to silty clay loam	ML	A-4	0	0	100	100	95-100	75-90	20-35	NP-10
Emdent	0-16	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-40	NP-10
	16-60	Silt loam, very fine sandy loam, loam	ML	A-4	0	0	100	90-100	85-100	50-90	30-40	NP-10
304:												
Nespelem	0-12	Silt loam	ML	A-4	0	0	100	100	95-100	80-90	20-30	NP-5
	12-22	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	50-90	20-30	NP-5
	22-24	Cemented			---	---	---	---	---	---	---	---
	24-60	Stratified very fine sandy loam to silty clay loam	ML	A-4	0	0	100	100	95-100	75-90	20-35	NP-10
Typic Xerorthents	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-100	75-90	20-35	5-15
	9-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-95	20-35	5-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
305:												
Neuske	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	75-95	55-85	20-30	NP-5
	5-24	Silt loam, loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-95	75-95	55-75	25-40	5-15
	24-39	Loam, silt loam	CL	A-6	0	0-5	80-100	75-95	65-90	50-75	30-40	10-15
	39-50	Gravelly sandy clay loam, gravelly loam, clay loam	CL, GC, SC	A-6, A-7	0	0-20	70-95	65-90	45-80	40-65	30-45	10-20
	50-60	Stony sandy loam, cobbly loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-10	10-40	80-90	75-85	35-75	20-60	25-40	5-20
306:												
Neuske	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	75-95	55-85	20-30	NP-5
	5-24	Silt loam, loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-95	75-95	55-75	25-40	5-15
	24-39	Loam, silt loam	CL	A-6	0	0-5	80-100	75-95	65-90	50-75	30-40	10-15
	39-50	Gravelly sandy clay loam, gravelly loam, clay loam	CL, GC, SC	A-6, A-7	0	0-20	70-95	65-90	45-80	40-65	30-45	10-20
	50-60	Stony sandy loam, cobbly loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0-10	10-40	80-90	75-85	35-75	20-60	25-40	5-20

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
307:												
Nevine	0-9	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	9-18	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	18-28	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-4	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	28-41	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	41-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5
Nevine	0-7	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	7-15	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	15-25	Very gravelly loam, very gravelly sandy loam, very cobbly loam	SC-SM, SM, GC-GM, GM	A-1, A-2, A-4	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	25-38	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	38-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
308:												
Nevine----------	0-9	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	9-18	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	18-28	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-4	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	28-41	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	41-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5
Nevine----------	0-7	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	7-15	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	15-25	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-2, A-4, A-1	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	25-38	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	38-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
309:												
Nevine	0-9	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	9-18	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	18-28	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-2, A-4, A-1	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	28-41	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	41-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5
Nevine	0-7	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	7-15	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	15-25	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-4	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	25-38	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	38-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
310:												
Nevine----------	0-9	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	9-18	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	18-28	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-2, A-4, A-1	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	28-41	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	41-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5
Nevine----------	0-7	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	7-15	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	15-25	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-4	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	25-38	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	38-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
310:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
311:												
Nevine----------	0-9	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	9-18	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	18-28	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-4	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	28-41	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	41-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
311:												
Nevine	0-7	Silt loam	ML	A-4	0	0-10	85-100	80-100	70-95	50-80	30-40	NP-5
	7-15	Loam, silt loam, gravelly loam	ML	A-4	0	0-10	80-100	70-95	60-90	50-80	25-35	NP-5
	15-25	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-4	0-5	5-30	50-75	40-55	30-50	20-40	20-30	NP-10
	25-38	Very gravelly sandy loam, very cobbly sandy loam, very cobbly coarse sandy loam	GM, SM	A-1	0	10-30	50-75	40-55	25-45	10-25	15-20	NP-5
	38-60	Very gravelly loamy sand, very gravelly sandy loam, very stony sandy loam	GM, SM	A-1	0-25	5-20	50-65	40-55	25-40	10-20	15-20	NP-5
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
312:												
Newbell	0-11	Silt loam	ML	A-4	0	0-5	85-100	80-100	70-85	50-80	25-40	NP-10
	11-21	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	10-25	50-65	35-55	35-50	20-40	20-30	NP-5
	21-60	Very gravelly sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-1, A-2	0-2	10-30	35-65	25-50	20-45	10-35	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
313:												
Newbell---------	0-11	Silt loam	ML	A-4	0	0-5	85-100	80-100	70-85	50-80	25-40	NP-10
	11-21	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-2, A-4	0	10-25	50-65	35-55	35-50	20-40	20-30	NP-5
	21-60	Very gravelly sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-2, A-1	0-2	10-30	35-65	25-50	20-45	10-35	20-30	NP-5
314:												
Newbell---------	0-11	Silt loam	ML	A-4	0	0-5	85-100	80-100	70-85	50-80	25-40	NP-10
	11-21	Very gravelly loam, very gravelly sandy loam	GM	A-2, A-4, A-1	0	10-25	50-65	35-55	35-50	20-40	20-30	NP-5
	21-60	Very gravelly sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-2, A-1	0-2	10-30	35-65	25-50	20-45	10-35	20-30	NP-5
315:												
Northstar-------	0-10	Gravelly loam	SM	A-4, A-2	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	10-26	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-1, A-2	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
316:												
Northstar-------	0-10	Gravelly loam	SM	A-2, A-4	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	10-26	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-1, A-2	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	26-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
317:												
Northstar-------	0-2	Gravelly loam	SM	A-2, A-4	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	2-18	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-2, A-1	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	18-27	Very gravelly loam, extremely gravelly sandy loam, extremely cobbly loam	GM	A-1	0-10	10-45	30-50	20-40	15-35	10-25	15-25	NP-5
	27-31	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
317:												
Johntom---------	0-4	Stony loam	GM, SM	A-4	0	5-30	65-85	55-75	50-65	35-50	15-20	NP-5
	4-11	Very gravelly loam, extremely gravelly sandy loam, very gravelly sandy loam	GM	A-1, A-2	0	10-30	40-60	30-50	30-45	15-35	15-25	NP-5
	11-16	Very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly coarse sandy loam	GM, GP-GM	A-1	0	10-30	25-40	15-40	10-25	5-15	15-25	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
318:												
Northstar-------	0-2	Gravelly loam	SM	A-2, A-4	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	2-18	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-2, A-1	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	18-27	Very gravelly loam, extremely gravelly sandy loam, extremely cobbly loam	GM	A-1	0-10	10-45	30-50	20-40	15-35	10-25	15-25	NP-5
	27-31	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
318:												
Johntom	0-4	Stony loam	GM, SM	A-4	0	5-30	65-85	55-75	50-65	35-50	15-20	NP-5
	4-11	Very gravelly loam, extremely gravelly sandy loam, very gravelly sandy loam	GM	A-1, A-2	0	10-30	40-60	30-50	30-45	15-35	15-25	NP-5
	11-16	Very gravelly sandy loam, extremely gravelly sandy loam, extremely gravelly coarse sandy loam	GM, GP-GM	A-1	0	10-30	25-40	15-40	10-25	5-15	15-25	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
319:												
Northstar	0-2	Gravelly loam	SM	A-2, A-4	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	2-18	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-1, A-2	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	18-27	Very gravelly loam, extremely gravelly sandy loam, extremely cobbly loam	GM	A-1	0-10	10-45	30-50	20-40	15-35	10-25	15-25	NP-5
	27-31	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
319:												
Louiecreek------	0-13	Gravelly loam	GM, ML, SM	A-4	0	0-10	60-80	55-75	50-70	35-55	15-25	NP-5
	13-20	Gravelly loam, very gravelly loam, very cobbly sandy loam	GM	A-2, A-4, A-1	0-10	10-45	35-65	30-60	20-50	15-40	15-25	NP-5
	20-32	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1, A-2	0-10	15-50	35-55	30-50	20-45	15-35	15-25	NP-5
	32-60	Extremely gravelly loam, very gravelly sandy loam, extremely cobbly sandy loam	GM	A-1, A-2	0-10	15-55	25-45	20-45	15-40	10-30	0-25	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
320:												
Northstar-------	0-2	Gravelly loam	SM	A-2, A-4	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	2-18	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-1, A-2	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	18-27	Very gravelly loam, extremely gravelly sandy loam, extremely cobbly loam	GM	A-1	0-10	10-45	30-50	20-40	15-35	10-25	15-25	NP-5
	27-31	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
320:												
Louiecreek------	0-13	Gravelly loam	GM, ML, SM	A-4	0	0-10	60-80	55-75	50-70	35-55	15-25	NP-5
	13-20	Gravelly loam, very gravelly loam, very cobbly sandy loam	GM	A-2, A-4, A-1	0-10	10-45	35-65	30-60	20-50	15-40	15-25	NP-5
	20-32	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-2, A-1	0-10	15-50	35-55	30-50	20-45	15-35	15-25	NP-5
	32-60	Extremely gravelly loam, very gravelly sandy loam, extremely cobbly sandy loam	GM	A-2, A-1	0-10	15-55	25-45	20-45	15-40	10-30	0-25	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
321:												
Northstar-------	0-2	Gravelly loam	SM	A-4, A-2	0	0-5	65-80	55-70	40-65	25-50	15-25	NP-5
	2-18	Very gravelly loam, extremely gravelly loam, very cobbly loam	GM	A-2, A-1	0-5	10-45	35-55	25-45	20-40	15-30	15-25	NP-5
	18-27	Very gravelly loam, extremely gravelly sandy loam, extremely cobbly loam	GM	A-1	0-10	10-45	30-50	20-40	15-35	10-25	15-25	NP-5
	27-31	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
322:												
Ohscow----------	0-4	Silt loam	ML	A-4	0	0	90-100	85-100	75-95	60-80	30-40	NP-5
	4-11	Silt loam, loam, gravelly loam	ML, SM	A-4	0	0-10	70-95	60-85	50-85	35-75	30-40	NP-5
	11-27	Gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-30	55-70	45-60	20-40	15-25	0-20	NP-5
	27-46	Very cobbly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam	GM, SM	A-1	0-5	25-45	35-60	25-50	15-35	10-20	0-20	NP-5
	46-60	Very cobbly loamy sand, very gravelly loamy sand, extremely gravelly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-10	25-45	35-60	25-50	15-40	5-15	0-14	NP
323:												
Ohscow----------	0-4	Silt loam	ML	A-4	0	0	90-100	85-100	75-95	60-80	30-40	NP-5
	4-11	Silt loam, loam, gravelly loam	ML, SM	A-4	0	0-10	70-95	60-85	50-85	35-75	30-40	NP-5
	11-27	Gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-30	55-70	45-60	20-40	15-25	0-20	NP-5
	27-46	Very cobbly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam	GM, SM	A-1	0-5	25-45	35-60	25-50	15-35	10-20	0-20	NP-5
	46-60	Very cobbly loamy sand, very gravelly loamy sand, extremely gravelly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-10	25-45	35-60	25-50	15-40	5-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
324:												
Ohscow----------	0-5	Silt loam	ML	A-4	0	0	90-100	85-100	75-95	60-80	30-40	NP-5
	5-14	Silt loam, loam, gravelly loam	ML, SM	A-4	0	0-10	70-95	60-85	50-85	35-75	30-40	NP-5
	14-25	Gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-30	55-70	45-60	20-40	15-25	0-20	NP-5
	25-39	Very cobbly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam	GM, SM	A-1	0-5	25-45	35-60	25-50	15-35	10-20	0-20	NP-5
	39-60	Very cobbly loamy sand, very gravelly loamy sand, extremely gravelly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-10	25-45	35-60	25-50	15-40	5-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
325:												
Ohscow	0-5	Silt loam	ML	A-4	0	0	90-100	85-100	75-95	60-80	30-40	NP-5
	5-14	Silt loam, loam, gravelly loam	ML, SM	A-4	0	0-10	70-95	60-85	50-85	35-75	30-40	NP-5
	14-25	Gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-30	55-70	45-60	20-40	15-25	0-20	NP-5
	25-39	Very cobbly sandy loam, very gravelly sandy loam, extremely gravelly sandy loam	GM, SM	A-1	0-5	25-45	35-60	25-50	15-35	10-20	0-20	NP-5
	39-60	Very cobbly loamy sand, very gravelly loamy sand, extremely gravelly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-10	25-45	35-60	25-50	15-40	5-15	0-14	NP
326:												
Okanogan	0-14	Loam	ML	A-4	0	0	100	95-100	80-95	60-75	20-30	NP-5
	14-42	Loam, very fine sandy loam, silt loam	ML	A-4	0	0	100	95-100	80-95	50-80	20-30	NP-5
	42-60	Stratified sand to silt loam	ML, SM	A-2, A-4	0	0	90-100	85-95	60-85	10-65	0-30	NP-5
327:												
Omak	0-10	Silt loam	ML	A-4	0	0	95-100	85-100	80-95	65-80	20-30	NP-5
	10-26	Silt loam, loam	CL, CL-ML	A-4, A-6	0	0	95-100	85-100	80-95	60-75	25-35	5-15
	26-38	Clay loam, silty clay loam, silty clay	CL	A-6, A-7	0	0-10	90-100	85-100	80-95	65-85	35-50	15-25
	38-45	Cemented			---	---	---	---	---	---	---	---
	45-60	Indurated			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
328:												
Owhi	0-12	Loam	ML	A-4	0	0	85-100	80-95	70-90	50-70	15-20	NP-5
	12-20	Sandy loam, gravelly sandy loam, gravelly loam	SM	A-2, A-4, A-1	0-2	0-15	65-90	55-85	35-70	20-50	15-20	NP-5
	20-26	Very gravelly sandy loam, gravelly fine sandy loam, loamy sand	SM	A-1, A-2	0	0-5	70-90	45-85	40-70	20-35	15-20	NP-5
	26-60	Very gravelly coarse sand, extremely gravelly loamy sand, extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	0-5	30-60	15-45	5-30	0-10	0-14	NP
329:												
Owhi	0-6	Stony loam	ML	A-4	3-10	0-5	85-100	75-95	65-85	50-60	15-20	NP-5
	6-23	Loam, sandy loam, gravelly sandy loam, gravelly loam	SM	A-2, A-4	0-1	0-15	65-90	55-85	50-70	20-50	15-20	NP-5
	23-60	Very gravelly coarse sand, extremely gravelly loamy sand, extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-1	0-5	30-60	15-45	5-30	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
330:												
Owhi	0-9	Fine sandy loam	SM	A-2, A-4	0	0	90-100	80-90	60-70	30-40	15-20	NP-5
	9-18	Gravelly sandy loam, gravelly fine sandy loam, loamy sand	SM	A-1, A-2	0	0	70-90	60-85	40-70	20-35	15-20	NP-5
	18-60	Extremely gravelly coarse sand, very gravelly coarse sand, extremely gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-5	30-60	15-45	5-30	0-10	0-14	NP
Haley	0-10	Fine sandy loam	ML, SM	A-4	0	0	100	90-100	70-90	40-55	0-14	NP
	10-24	Fine sandy loam	ML, SM	A-4	0	0	90-100	90-100	70-90	40-55	0-14	NP
	24-30	Sand, loamy sand, loamy fine sand	SP, SP-SM	A-2, A-3, A-1	0	0	100	90-100	40-60	0-10	0-14	NP
	30-60	Coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-60	0-10	0-14	NP
331:												
Oxerine	0-5	Silt loam	ML	A-4	0	0-5	85-95	80-90	70-80	50-60	20-25	NP-5
	5-20	Gravelly loam, channery silt loam, channery loam	GM, SM	A-2, A-4	0	0-20	45-75	40-70	35-65	25-45	20-25	NP-5
	20-28	Very channery loam, very gravelly loam, extremely flaggy sandy loam	GM	A-1, A-2	0	30-80	35-50	30-45	20-40	10-30	20-25	NP-5
	28-32	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
332:												
Oxerine	0-5	Silt loam	ML	A-4	0	0-5	85-95	80-90	70-80	50-60	20-25	NP-5
	5-20	Gravelly loam, channery silt loam, channery sandy loam	GM, SM	A-4, A-2	0	0-20	45-75	40-70	35-65	25-45	20-25	NP-5
	20-28	Very channery loam, very gravelly loam, extremely flaggy sandy loam	GM	A-1, A-2	0	30-80	35-50	30-45	20-40	10-30	20-25	NP-5
	28-32	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
333:												
Oxerine	0-5	Silt loam	ML	A-4	0	0-5	85-95	80-90	70-80	50-60	20-25	NP-5
	5-20	Gravelly loam, very gravelly silt loam, very channery loam	GM, SM	A-2, A-4	0	0-20	45-75	40-70	35-65	25-45	20-25	NP-5
	20-28	Very channery sandy loam, very gravelly loam, extremely flaggy sandy loam	GM	A-1, A-2	0	30-80	35-50	30-45	20-40	10-30	20-25	NP-5
	28-32	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
334:												
Oxerine	0-5	Silt loam	ML	A-4	0	0-5	85-95	80-90	70-80	50-60	20-25	NP-5
	5-20	Gravelly loam, very channery silt loam, very channery loam	GM, SM	A-4, A-2	0	0-20	45-75	40-70	35-65	25-45	20-25	NP-5
	20-28	Very channery loam, very gravelly loam, extremely flaggy sandy loam	GM	A-2, A-1	0	30-80	35-50	30-45	20-40	10-30	20-25	NP-5
	28-32	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
334:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
335:												
Oxerine---------	0-5	Silt loam	ML	A-4	0	0-5	85-95	80-90	70-80	50-60	20-25	NP-5
	5-20	Gravelly loam, channery silt loam, very channery loam	GM, SM	A-2, A-4	0	0-20	45-75	40-70	35-65	25-45	20-25	NP-5
	20-28	Very channery sandy loam, very gravelly loam, extremely flaggy sandy loam	GM	A-1, A-2	0	30-80	35-50	30-45	20-40	10-30	20-25	NP-5
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
336:												
Parmenter-------	0-4	Silt loam	ML	A-4	0	0-5	90-100	90-100	85-100	70-90	25-35	NP-5
	4-16	Silt loam, stony silt loam, gravelly silt loam	ML	A-4	0-10	10-25	85-95	70-95	70-90	50-75	20-30	NP-5
	16-60	Very stony loamy sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	10-25	35-40	35-65	20-45	15-35	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
337:												
Parmenter-------	0-4	Silt loam	ML	A-4	0	0-5	90-100	90-100	85-100	70-90	25-35	NP-5
	4-16	Silt loam, stony silt loam, gravelly silt loam	ML	A-4	0-10	10-25	85-95	70-95	70-90	50-75	20-30	NP-5
	16-60	Very stony loamy sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	10-25	35-40	35-65	20-45	15-35	0-10	0-14	NP
338:												
Parmenter-------	0-4	Silt loam	ML	A-4	0	0-5	90-100	90-100	85-100	70-90	25-35	NP-5
	4-16	Silt loam, stony silt loam, gravelly silt loam	ML	A-4	0-10	10-25	85-95	70-95	70-90	50-75	20-30	NP-5
	16-60	Very stony loamy sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	10-25	35-40	35-65	20-45	15-35	0-10	0-14	NP
339:												
Parmenter-------	0-5	Bouldery silt loam	ML	A-4	0-10	5-15	95-100	90-100	85-100	70-90	25-35	NP-5
	5-15	Bouldery silt loam, gravelly silt loam, gravelly loam	ML	A-4	0-10	20-25	95-100	65-90	60-90	50-70	20-30	NP-5
	15-60	Extremely bouldery loamy fine sand, extremely bouldery loamy coarse sand, extremely gravelly coarse sand	GP, SP	A-1	25-35	30-40	25-60	20-35	10-20	0-5	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
340:												
Peshastin-------	0-10	Stony fine sandy loam	SM	A-2, A-4	2-5	5-10	65-95	60-90	50-75	30-50	15-20	NP-5
	10-21	Loam, fine sandy loam, cobbly sandy loam	ML, SM	A-4	0-10	10-20	85-95	80-90	80-85	35-60	15-20	NP-5
	21-60	Extremely gravelly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-10	25-35	35-55	20-50	20-40	10-25	0-14	NP
341:												
Peshastin-------	0-10	Stony fine sandy loam	SM	A-4, A-2	2-5	5-10	65-95	60-90	50-75	30-50	15-20	NP-5
	10-21	Loam, fine sandy loam, cobbly sandy loam	ML, SM	A-4	0-10	10-20	85-95	80-90	80-85	35-60	15-20	NP-5
	21-60	Extremely gravelly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-10	25-35	35-55	20-50	20-40	10-25	0-14	NP
342:												
Peshastin-------	0-8	Extremely bouldery loam	ML, SM	A-4	25-35	25-40	70-85	65-80	55-75	40-60	15-20	NP-5
	8-22	Loam, fine sandy loam, cobbly sandy loam	ML, SM	A-4	0-10	10-20	85-95	80-90	80-85	35-60	15-20	NP-5
	22-60	Extremely gravelly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-10	25-35	35-55	20-50	20-40	10-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
343:												
Phoebe	0-11	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	11-47	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	100	100	65-80	30-45	20-30	NP-5
	47-60	Loamy sand, sand	SP-SM, SM	A-2, A-3, A-1	0	0	80-100	75-100	40-70	5-30	0-14	NP
344:												
Phoebe	0-11	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	11-47	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	100	100	65-80	30-45	20-30	NP-5
	47-60	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-70	5-30	0-14	NP
345:												
Phoebe	0-11	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	11-47	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	100	100	65-80	30-45	20-30	NP-5
	47-60	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-70	5-30	0-14	NP
346:												
Phoebe	0-11	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	11-47	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	100	100	65-80	30-45	20-30	NP-5
	47-60	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-70	5-30	0-14	NP
347:												
Phoebe	0-10	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	10-27	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	100	100	65-80	30-45	20-30	NP-5
	27-36	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	90-100	60-80	30-40	20-30	NP-5
	36-60	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-70	5-30	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
348:												
Phoebe	0-10	Fine sandy loam	SM	A-4, A-2	0	0	100	100	70-80	30-40	20-30	NP-5
	10-27	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	100	100	65-80	30-45	20-30	NP-5
	27-36	Sandy loam, fine sandy loam	SM	A-2, A-4	0	0	100	90-100	60-80	30-40	20-30	NP-5
	36-60	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-70	5-30	0-14	NP
349:												
Phoebe	0-10	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	10-27	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0	100	100	65-80	30-45	20-30	NP-5
	27-36	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	90-100	60-80	30-40	20-30	NP-5
	36-60	Loamy sand, sand	SM, SP-SM	A-2, A-3, A-1	0	0	80-100	75-100	40-70	5-30	0-14	NP
350:												
Phoebe	0-16	Fine sandy loam	SM	A-4, A-2	0	0	100	100	70-80	30-40	20-30	NP-5
	16-30	Gravelly fine sandy loam, sandy loam	SM	A-2, A-4	0	0	100	80-100	65-80	30-45	20-30	NP-5
	30-39	Gravelly sandy loam, fine sandy loam	SM	A-2, A-4	0	0	100	80-100	60-80	30-40	20-30	NP-5
	39-60	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	40-70	5-30	0-14	NP
Dehart	0-7	Gravelly loam	ML	A-4	0	0	80-90	70-75	60-70	50-55	15-25	NP-5
	7-32	Very gravelly loam, very gravelly sandy loam	GM	A-1, A-4, A-2	0	5-25	40-65	35-55	20-50	15-40	20-30	NP-5
	32-60	Very gravelly loam, very cobbly sandy loam, extremely gravelly sandy loam	GM	A-1, A-2	0-10	10-35	35-65	25-50	15-45	10-35	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
351:												
Picard	0-5	Very fine sandy loam	ML	A-4	0	0	95-100	90-100	80-90	50-65	20-25	NP-5
	5-16	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	16-40	Loam, very fine sandy loam, fine sandy loam	ML, SM	A-2, A-4	0	0	95-100	90-100	70-90	30-55	20-30	NP-5
	40-51	Very fine sandy loam, fine sandy loam, gravelly sandy loam	ML, SM	A-2, A-4	0	0	80-100	70-100	65-90	30-55	20-25	NP-5
	51-60	Very fine sandy loam, loamy fine sand, gravelly loamy fine sand	SM	A-4, A-2	0	0	75-100	70-100	60-90	20-40	15-25	NP-5
352:												
Picard	0-5	Very fine sandy loam	ML	A-4	0	0	95-100	90-100	80-90	50-65	20-25	NP-5
	5-16	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-80	30-40	20-30	NP-5
	16-40	Loam, very fine sandy loam, fine sandy loam	ML, SM	A-2, A-4	0	0	95-100	90-100	70-90	30-55	20-30	NP-5
	40-51	Very fine sandy loam, fine sandy loam, gravelly sandy loam	ML, SM	A-2, A-4	0	0	80-100	70-100	65-90	30-55	20-25	NP-5
	51-60	Very fine sandy loam, loamy fine sand, gravelly loamy fine sand	SM	A-2, A-4	0	0	75-100	70-100	60-90	20-40	15-25	NP-5
353:												
Pits	0-60	Gravel, sand			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
354:												
Pogue	0-8	Fine sandy loam	SM	A-4	0	0	95-100	85-100	70-85	40-50	20-30	NP-5
	8-22	Fine sandy loam, gravelly sandy loam	SM	A-2, A-4	0	0-10	70-95	60-90	50-75	30-45	20-30	NP-5
	22-60	Very gravelly sand, very cobbly sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-2	5-40	50-65	40-55	15-30	0-15	0-14	NP
355:												
Pogue	0-8	Fine sandy loam	SM	A-4	0	0	95-100	85-100	70-85	40-50	20-30	NP-5
	8-22	Fine sandy loam, gravelly sandy loam	SM	A-2, A-4	0	0-10	70-95	60-90	50-75	30-45	20-30	NP-5
	22-60	Very gravelly sand, very cobbly sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-2	5-40	50-65	40-55	15-30	0-15	0-14	NP
356:												
Pogue	0-8	Fine sandy loam	SM	A-4	0	0	95-100	85-100	70-85	40-50	20-30	NP-5
	8-22	Fine sandy loam, gravelly sandy loam	SM	A-2, A-4	0	0-10	70-95	60-90	50-75	30-45	20-30	NP-5
	22-60	Very gravelly sand, very cobbly sand, very gravelly loamy coarse sand	GM, GP, SM, SP	A-1	0-2	5-40	50-65	40-55	15-30	0-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
357:												
Pogue	0-12	Gravelly fine sandy loam	SM	A-4, A-2	0	0-5	75-85	55-75	40-60	30-40	20-30	NP-5
	12-29	Fine sandy loam, gravelly fine sandy loam	SM	A-4, A-2	0	0-10	70-95	60-90	50-75	30-45	20-30	NP-5
	29-60	Extremely gravelly coarse sand, very cobbly sand, very gravelly loamy sand	GM, GP, SM, SP	A-1	0-2	5-40	50-65	40-55	15-30	0-15	0-14	NP
358:												
Pogue	0-7	Stony fine sandy loam	SM	A-4, A-2	5-10	5-20	75-95	65-90	50-75	30-50	20-30	NP-5
	7-21	Gravelly loam, cobbly fine sandy loam, gravelly fine sandy loam	GM, SM	A-4, A-2	0-2	0-15	60-80	55-75	45-65	25-45	20-30	NP-5
	21-60	Very gravelly loamy sand, very cobbly sand, very gravelly coarse sand	GM, GP, SM, SP	A-1	0-2	5-45	40-65	30-55	15-30	0-15	0-14	NP
359:												
Pogue	0-7	Stony fine sandy loam	SM	A-2, A-4	5-10	5-20	75-95	65-90	50-75	30-50	20-30	NP-5
	7-21	Gravelly loam, cobbly fine sandy loam, gravelly fine sandy loam	GM, SM	A-2, A-4	0-2	0-15	60-80	55-75	45-65	25-45	20-30	NP-5
	21-60	Very gravelly loamy sand, very cobbly sand, very gravelly coarse sand	GM, GP, SM, SP	A-1	0-2	5-45	40-65	30-55	15-30	0-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
360:												
Poween	0-12	Loam	CL-ML, ML	A-4	0	0	95-100	85-100	75-90	55-70	15-25	NP-10
	12-30	Loam, sandy loam, silt loam	ML, SC-SM, SM, CL-ML	A-2, A-4	0	0	95-100	85-100	60-90	30-70	15-25	NP-10
	30-44	Fine sandy loam, sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	85-100	60-90	30-60	15-25	NP-10
	44-60	Stratified loamy fine sand to silt loam	CL, CL-ML, ML, SM	A-4, A-6, A-2	0	0	90-100	75-100	60-90	25-70	15-30	NP-15
361:												
Quincy	0-1	Sand	SM	A-2	0	0	100	100	55-75	10-15	0-14	NP
	1-60	Loamy sand, fine sand, sand	SM	A-2	0	0	95-100	90-100	50-70	10-30	0-14	NP
362:												
Quincy	0-5	Fine sand	SM	A-2	0	0	100	100	55-75	10-15	0-14	NP
	5-60	Loamy sand, fine sand, sand	SM	A-2	0	0	95-100	90-100	50-70	10-30	0-14	NP
363:												
Quincy	0-12	Loamy sand	SM	A-2	0	0	100	100	60-80	15-30	0-14	NP
	12-40	Loamy fine sand, loamy sand, sand	SM	A-2	0	0	95-100	90-100	50-75	10-35	0-14	NP
	40-49	Gravelly coarse sand, gravelly sand, gravelly loamy sand	SM, SP-SM	A-1	0	0-10	65-90	60-75	30-50	5-20	0-14	NP
	49-60	Coarse sand, sand	SM, SP-SM	A-3, A-2	0	0	95-100	90-100	50-70	5-15	0-14	NP
364:												
Quincy	0-5	Loamy fine sand	SM	A-2	0	0	100	100	60-80	15-30	0-14	NP
	5-28	Loamy fine sand, loamy sand, sand	SM	A-2	0	0	95-100	90-100	50-75	10-35	0-14	NP
	28-52	Loamy sand, fine sand, sand	SM	A-2	0	0	95-100	90-100	50-70	10-30	0-14	NP
	52-60	Coarse sand, sand	SM, SP-SM	A-2, A-3	0	0	95-100	90-100	50-70	5-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
365:												
Quincy	0-1	Loamy fine sand	SM	A-2	0	0	100	100	60-80	15-30	0-14	NP
	1-28	Loamy fine sand, loamy sand, sand	SM	A-2	0	0	95-100	90-100	50-75	10-35	0-14	NP
	28-52	Loamy sand, fine sand, sand	SM	A-2	0	0	95-100	90-100	50-70	10-30	0-14	NP
	52-60	Coarse sand, sand	SM, SP-SM	A-2, A-3	0	0	95-100	90-100	50-70	5-15	0-14	NP
366:												
Quincy	0-5	Loamy fine sand	SM	A-2	0	0	100	100	60-80	15-30	0-14	NP
	5-28	Loamy fine sand, loamy sand, sand	SM	A-2	0	0	95-100	90-100	50-75	10-35	0-14	NP
	28-52	Loamy sand, fine sand, sand	SM	A-2	0	0	95-100	90-100	50-70	10-30	0-14	NP
	52-60	Coarse sand, sand	SM, SP-SM	A-3, A-2	0	0	95-100	90-100	50-70	5-15	0-14	NP
367:												
Quincy	0-7	Loamy sand	SM	A-2	0	0	100	100	60-80	15-30	0-14	NP
	7-17	Loamy fine sand, loamy sand, sand	SM	A-2	0	0	95-100	90-100	50-75	10-35	0-14	NP
	17-60	Loamy sand, fine sand, sand	SM	A-2	0	0	95-100	90-100	50-70	10-30	0-14	NP
Aeneas	0-10	Fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	65-80	40-60	0-14	NP
	10-27	Fine sandy loam, sandy loam	ML, SM	A-4	0	0	90-100	85-100	60-80	35-60	0-14	NP
	27-60	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	90-100	85-100	40-80	5-25	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
368:												
Raisio----------	0-5	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	5-12	Very flaggy loam, very channery loam, extremely flaggy sandy loam	GM, SM	A-2, A-4, A-1	25-35	20-40	40-80	30-70	20-60	10-50	20-30	NP-5
	12-28	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-2, A-1	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
369:												
Raisio----------	0-5	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	5-12	Very flaggy loam, very channery loam, extremely flaggy sandy loam	GM, SM	A-1, A-2, A-4	25-35	20-40	40-80	30-70	20-60	10-50	20-30	NP-5
	12-28	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-1, A-2	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
370:												
Raisio	0-8	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	8-14	Very flaggy loam, very channery loam, extremely flaggy sandy loam	GM, SM	A-1, A-2, A-4	25-35	20-40	40-80	30-70	20-60	10-50	20-30	NP-5
	14-24	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-2, A-1	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	24-28	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rufus	0-7	Channery loam	GM, ML, SM	A-4	0	0-5	60-80	55-75	50-70	35-55	20-30	NP-5
	7-14	Very channery loam, extremely channery sandy loam, very flaggy loam	GM, GP-GM	A-1, A-2, A-4	25-30	5-40	30-70	20-55	10-50	5-45	20-30	NP-5
	14-18	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
371:												
Raisio	0-8	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	8-14	Very flaggy loam, very channery loam, extremely flaggy sandy loam	GM, SM	A-1, A-2, A-4	25-35	20-40	40-80	30-70	20-60	10-50	20-30	NP-5
	14-24	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-1, A-2	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	24-28	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
371:												
Rufus	0-7	Channery loam	GM, ML, SM	A-4	0	0-5	60-80	55-75	50-70	35-55	20-30	NP-5
	7-14	Very channery loam, extremely channery sandy loam, very flaggy loam	GM, GP-GM	A-1, A-2, A-4	25-30	5-40	30-70	20-55	10-50	5-45	20-30	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
372:												
Raisio	0-5	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	5-12	Very flaggy loam, very channery loam, extremely flaggy sandy loam	GM, SM	A-4, A-1, A-2	25-35	20-40	40-80	30-70	20-60	10-50	20-30	NP-5
	12-28	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-1, A-2	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
Rufus	0-5	Channery loam	GM, ML, SM	A-4	0	0-5	60-80	55-75	50-70	35-55	20-30	NP-5
	5-15	Very flaggy loam, extremely flaggy loam, very channery sandy loam	GM, GP-GM	A-1, A-4, A-2	10-15	10-45	30-70	20-55	10-50	5-45	20-30	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
373:												
Raisio	0-5	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	5-12	Very flaggy loam, very channery loam, extremely flaggy sandy loam	GM, SM	A-1, A-2, A-4	25-35	20-40	40-80	30-70	20-60	10-50	20-30	NP-5
	12-28	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-1, A-2	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
Rufus	0-5	Channery loam	ML, SM, GM	A-4	0	0-5	60-80	55-75	50-70	35-55	20-30	NP-5
	5-15	Very channery loam, extremely channery sandy loam, very flaggy loam	GM, GP-GM	A-4, A-2, A-1	25-30	5-40	30-70	20-55	10-50	5-45	20-30	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
374:												
Raisio	0-11	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	11-24	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-1, A-2	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
374:												
Rufus	0-12	Channery loam	GM, ML, SM	A-4	0	0-5	60-80	55-75	50-70	35-55	20-30	NP-5
	12-16	Very channery loam, extremely channery sandy loam, very flaggy loam	GM, GP-GM	A-1, A-2, A-4	25-30	5-40	30-70	20-55	10-50	5-45	20-30	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
375:												
Raisio	0-11	Channery loam	ML, SM	A-4	0	0-10	70-85	60-75	50-70	35-55	20-30	NP-5
	11-24	Extremely flaggy loam, very channery loam, extremely flaggy sandy loam	GM	A-1, A-2	25-35	20-50	30-65	20-55	15-50	10-35	20-30	NP-5
	24-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Rufus	0-12	Channery loam	GM, ML, SM	A-4	0	0-5	60-80	55-75	50-70	35-55	20-30	NP-5
	12-16	Very channery loam, extremely channery sandy loam, very flaggy loam	GM, GP-GM	A-1, A-2, A-4	25-30	5-40	30-70	20-55	10-50	5-45	20-30	NP-5
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---
376:												
Ralsen	0-11	Silt loam	ML	A-4	0	0	95-100	90-100	85-95	65-85	15-25	NP-5
	11-42	Stratified sandy loam to silt loam	ML, SM	A-4	0	0	90-100	80-100	60-90	35-75	15-25	NP-5
	42-60	Stratified gravelly sand to fine sandy loam	SM	A-1, A-2, A-4	0	0	70-100	60-100	40-70	15-40	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
377:												
Ratlake	0-2	Silty clay loam	CL	A-6	0	0	95-100	80-100	80-100	70-90	30-35	10-15
	2-18	Silt loam, silty clay loam	CL	A-6, A-7	0	0	95-100	80-100	80-100	70-90	30-45	10-20
	18-22	Indurated			---	---	---	---	---	---	---	---
378:												
Reardan	0-11	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-95	25-30	5-10
	11-22	Silt loam, silty clay loam	ML	A-4, A-6	0	0	100	100	95-100	80-90	30-40	5-15
	22-51	Silty clay loam, silty clay, clay	CH, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-55	15-35
	51-60	Silt loam, silty clay loam	ML	A-4, A-6	0	0	100	95-100	95-100	80-90	30-40	5-15
379:												
Reardan	0-11	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-95	25-30	5-10
	11-22	Silt loam, silty clay loam	ML	A-4, A-6	0	0	100	100	95-100	80-90	30-40	5-15
	22-51	Silty clay loam, silty clay, clay	CH, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-55	15-35
	51-60	Silt loam, silty clay loam	ML	A-4, A-6	0	0	100	95-100	95-100	80-90	30-40	5-15
380:												
Rebecca	0-16	Fine sandy loam	SM	A-2, A-4	0	0	80-100	75-95	50-75	30-50	15-25	NP-5
	16-36	Gravelly sandy loam, gravelly fine sandy loam	GM, SM	A-1, A-2	0	0	55-80	50-75	30-60	15-35	15-25	NP-5
	36-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	GM, SM	A-1, A-2	0	0-5	55-80	50-75	25-50	10-30	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
381:												
Rebecca	0-15	Gravelly sandy loam	GM, SM	A-1, A-2	0	0	60-80	55-75	35-50	15-30	15-25	NP-5
	15-45	Gravelly sandy loam, gravelly fine sandy loam	GM, SM	A-1, A-2	0	0	55-80	50-75	30-60	15-35	15-25	NP-5
	45-60	Gravelly sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam	GM, SM	A-1, A-2	0	0-5	55-80	50-75	25-50	10-30	15-25	NP-5
382:												
Renha	0-2	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	65-75	25-35	NP-5
	2-7	Silt loam	ML	A-4	0	0-15	90-100	75-100	70-90	60-80	25-35	NP-10
	7-11	Silt loam, gravelly silt loam	CL	A-6	0	0-15	85-100	75-95	70-85	60-75	25-35	10-15
	11-28	Clay loam, clay, gravelly clay loam	CH, CL	A-7	0	0-10	85-100	75-90	70-90	60-80	45-55	20-30
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
383:												
Renha	0-2	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	65-75	25-35	NP-5
	2-7	Silt loam	ML	A-4	0	0-15	90-100	75-100	70-90	60-80	25-35	NP-10
	7-11	Silt loam, gravelly silt loam	CL	A-6	0	0-15	85-100	75-95	70-85	60-75	25-35	10-15
	11-28	Clay loam, clay, gravelly clay loam	CH, CL	A-7	0	0-10	85-100	75-90	70-90	60-80	45-55	20-30
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
384:												
Renha	0-2	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	65-75	25-35	NP-5
	2-7	Silt loam	ML	A-4	0	0-15	90-100	75-100	70-90	60-80	25-35	NP-10
	7-11	Silt loam, gravelly silt loam	CL	A-6	0	0-15	85-100	75-95	70-85	60-75	25-35	10-15
	11-28	Clay loam, clay, gravelly clay loam	CH, CL	A-7	0	0-10	85-100	75-90	70-90	60-80	45-55	20-30
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
Oxerine	0-2	Silt loam	ML	A-4	0	0	90-100	75-100	65-90	55-75	30-40	NP-5
	2-9	Silt loam	ML	A-4	0	0	85-100	75-100	65-90	55-75	25-35	NP-5
	9-14	Channery silt loam, loam, gravelly silt loam	GM, ML, SM	A-4	0	0-10	65-95	55-85	50-75	35-60	20-30	NP-5
	14-24	Very stony loam, very channery fine sandy loam, very gravelly sandy loam	GM	A-1, A-2	0	15-30	45-60	40-55	25-40	15-30	20-25	NP-5
	24-27	Very channery fine sandy loam, very gravelly loamy sand, extremely gravelly fine sandy loam	GM, GP-GM	A-1	0	0-25	25-50	15-40	10-35	5-20	15-25	NP-5
	27-31	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
385:												
Republic	0-5	Loam	ML	A-4	0	0	80-95	75-90	65-85	50-70	20-30	NP-5
	5-11	Silt loam, sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0-5	70-95	60-90	45-80	30-70	20-30	NP-5
	11-38	Gravelly sandy loam, gravelly loam, gravelly silt loam	GM, ML, SM	A-2, A-4	0	0-5	65-95	55-90	50-70	30-60	20-30	NP-5
	38-60	Gravelly loam, very gravelly sandy loam, gravelly sandy loam	GM, SM	A-1, A-2, A-4	0	0-5	50-80	40-70	30-60	15-50	0-14	NP
386:												
Republic	0-5	Loam	ML	A-4	0	0	80-95	75-90	65-85	50-70	20-30	NP-5
	5-11	Silt loam, sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0-5	70-95	60-90	45-80	30-70	20-30	NP-5
	11-38	Gravelly sandy loam, gravelly loam, gravelly silt loam	GM, ML, SM	A-2, A-4	0	0-5	65-95	55-90	50-70	30-60	20-30	NP-5
	38-60	Gravelly loam, very gravelly sandy loam, gravelly sandy loam	GM, SM	A-1, A-2, A-4	0	0-5	50-80	40-70	30-60	15-50	0-14	NP
387:												
Republic	0-5	Loam	ML	A-4	0	0	80-95	75-90	65-85	50-70	20-30	NP-5
	5-11	Silt loam, sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0-5	70-95	60-90	45-80	30-70	20-30	NP-5
	11-38	Gravelly sandy loam, gravelly loam, gravelly silt loam	SM, GM, ML	A-2, A-4	0	0-5	65-95	55-90	50-70	30-60	20-30	NP-5
	38-60	Gravelly loam, very gravelly sandy loam, gravelly sandy loam	GM, SM	A-1, A-2, A-4	0	0-5	50-80	40-70	30-60	15-50	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
388:												
Resner	0-5	Loam	ML	A-4	0	0	95-100	90-100	80-95	65-75	30-40	NP-5
	5-17	Loam, silt loam	ML	A-4	0	0	90-100	75-100	65-95	50-80	25-35	NP-5
	17-60	Very gravelly loamy sand, extremely gravelly sand, extremely cobbly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-2	0-45	40-60	30-50	15-30	0-10	0-14	NP
389:												
Resner	0-5	Loam	ML	A-4	0	0	95-100	90-100	80-95	65-75	30-40	NP-5
	5-17	Loam, silt loam	ML	A-4	0	0	90-100	75-100	65-95	50-80	25-35	NP-5
	17-60	Very gravelly loamy sand, extremely gravelly sand, extremely cobbly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-2	0-45	40-60	30-50	15-30	0-10	0-14	NP
390:												
Ret	0-8	Silt loam	ML	A-4	0	0	95-100	85-100	65-100	60-90	20-30	NP-5
	8-22	Silt loam, loam, fine sandy loam	ML, SM	A-4	0	0	90-100	80-100	60-100	40-85	20-30	NP-5
	22-30	Stratified sandy loam to silt loam	ML, SM	A-4	0	0	80-100	75-100	55-95	40-85	20-30	NP-5
	30-60	Stratified gravelly coarse sand to silt loam	SM, SP, SP-SM	A-1, A-2, A-3	0	0	75-100	70-100	30-60	0-35	0-20	NP-5
391:												
Riverwash	0-60	Extremely gravelly sand			---	---	---	---	---	---	---	---
392:												
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
393:												
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
393:												
Chumstick-------	0-5	Extremely bouldery loam	GM	A-2, A-4	25-35	20-40	50-70	40-60	35-55	25-45	15-25	NP-5
	5-12	Very cobbly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam	GM	A-1, A-2	0-5	15-40	30-50	20-45	15-40	10-35	15-25	NP-5
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
394:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Chumstick-------	0-5	Extremely bouldery loam	GM	A-4, A-2	25-35	20-40	50-70	40-60	35-55	25-45	15-25	NP-5
	5-12	Very cobbly sandy loam, extremely cobbly sandy loam, very gravelly sandy loam	GM	A-2, A-1	0-5	15-40	30-50	20-45	15-40	10-35	15-25	NP-5
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
395:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
395:												
Mineral----------	0-6	Stony loam	GM, SM	A-4	5-10	5-10	55-80	50-75	45-65	35-50	20-30	NP-5
	6-12	Very gravelly loam, very cobbly sandy loam, very gravelly coarse sandy loam	GM	A-2, A-4, A-1	0-5	0-45	55-75	40-65	35-65	20-50	20-30	NP-5
	12-23	Very cobbly sandy loam, very stony sandy loam, very cobbly loam	SM	A-2, A-1	0-25	15-30	60-80	50-75	40-50	15-30	15-20	NP-5
	23-27	Unweathered bedrock			---	---	---	---	---	---	---	---
396:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Rufus----------	0-5	Channery loam	GM, ML, SM	A-4	0	0-5	60-80	55-75	50-70	35-55	20-30	NP-5
	5-15	Very channery loam, extremely channery sandy loam, very flaggy loam	GM, GP-GM	A-2, A-4, A-1	25-30	5-40	30-70	20-55	10-50	5-45	20-30	NP-5
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
397:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Soaplake--------	0-10	Loam	ML	A-4	0	0-10	90-100	85-95	75-90	50-70	15-25	NP-5
	10-17	Loam, fine sandy loam, gravelly sandy loam	ML, SM	A-4, A-2	0	0-10	75-100	70-95	40-75	25-55	15-25	NP-5
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---
398:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
398:												
Swakane	0-7	Very stony loam	GC-GM	A-2, A-4	10-20	20-25	55-70	45-65	40-60	30-50	20-30	5-10
	7-11	Very gravelly loam, very gravelly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	11-14	Extremely gravelly sandy loam, very gravelly sandy loam, very cobbly loam	GM	A-1, A-2	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
399:												
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Vanbrunt	0-3	Very stony sandy loam	SM	A-1, A-2	10-25	10-35	60-80	50-70	30-50	15-30	15-25	NP-5
	3-10	Gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam	SM	A-2, A-1	0-5	10-30	60-80	50-75	30-50	15-30	15-25	NP-5
	10-25	Extremely cobbly sandy loam, very cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-5	25-55	45-60	35-50	20-35	10-25	0-14	NP
	25-29	Unweathered bedrock			---	---	---	---	---	---	---	---
400:												
Roosevelt	0-14	Gravelly loam	GM, SM	A-4	0	0-10	65-85	55-75	50-70	35-50	20-30	NP-5
	14-28	Gravelly sandy loam, fine sandy loam, cobbly sandy loam	SM	A-1, A-2, A-4	0	0-15	65-85	55-80	35-65	20-40	20-30	NP-5
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
400:												
Soaplake	0-10	Loam	ML	A-4	0	0-10	90-100	85-95	75-90	50-70	15-25	NP-5
	10-17	Loam, fine sandy loam, gravelly sandy loam	ML, SM	A-2, A-4	0	0-10	75-100	70-95	40-75	25-55	15-25	NP-5
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
401:												
Roosevelt	0-14	Gravelly loam	GM, SM	A-4	0	0-10	65-85	55-75	50-70	35-50	20-30	NP-5
	14-28	Gravelly sandy loam, fine sandy loam, cobbly sandy loam	SM	A-2, A-4, A-1	0	0-15	65-85	55-80	35-65	20-40	20-30	NP-5
	28-32	Unweathered bedrock			---	---	---	---	---	---	---	---
Soaplake	0-10	Loam	ML	A-4	0	0-10	90-100	85-95	75-90	50-70	15-25	NP-5
	10-17	Loam, fine sandy loam, gravelly sandy loam	ML, SM	A-2, A-4	0	0-10	75-100	70-95	40-75	25-55	15-25	NP-5
	17-21	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
402:												
Rubble land	0-60	Fragmental material			---	---	---	---	---	---	---	---
403:												
Rubble land	0-60	Fragmental material			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
404:												
Rubble land	0-60	Fragmental material			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
404:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Haploxerolls----	0-16	Very cobbly silt loam	GM	A-4, A-2	10-15	25-40	50-65	45-60	40-55	30-50	20-30	NP-5
	16-60	Fragmental material	GP	A-1	20-40	30-70	0-65	0-5	0-5	0	---	---
405:												
Sacheen---------	0-8	Loamy sand	SM	A-2	0	0	95-100	85-100	50-65	15-30	0-14	NP
	8-25	Loamy fine sand, loamy sand	SM	A-2	0	0	90-100	85-100	50-80	15-30	0-14	NP
	25-60	Loamy sand, sand, gravelly sand	SM, SP-SM	A-2, A-3, A-1	0	0	70-95	60-90	30-65	5-20	0-14	NP
406:												
Sacheen---------	0-8	Loamy sand	SM	A-2	0	0	95-100	85-100	50-65	15-30	0-14	NP
	8-25	Loamy fine sand, loamy sand	SM	A-2	0	0	90-100	85-100	50-80	15-30	0-14	NP
	25-60	Loamy sand, sand, gravelly sand	SM, SP-SM	A-1, A-2, A-3	0	0	70-95	60-90	30-65	5-20	0-14	NP
407:												
Sacheen---------	0-4	Loamy fine sand	SM	A-2	0	0	95-100	85-100	65-75	20-35	0-14	NP
	4-20	Loamy fine sand, loamy sand	SM	A-2	0	0	90-100	85-100	50-80	15-30	0-14	NP
	20-60	Loamy sand, sand, gravelly sand	SM, SP-SM	A-1, A-3, A-2	0	0	70-95	60-90	30-65	5-20	0-14	NP
408:												
Sanpoil---------	0-12	Silt loam	CL-ML, ML	A-4	0	0	85-100	75-100	70-95	60-80	20-30	NP-10
	12-28	Silt loam, loam	CL-ML, ML	A-4	0	0	85-100	75-100	65-90	50-75	20-30	NP-10
	28-41	Stratified gravelly sandy loam to silt loam	ML, SM	A-4, A-2	0	0	80-100	70-100	50-90	30-70	15-25	NP-5
	41-60	Stratified very gravelly sand to sandy loam	SP-SM, GM, GP-GM, SM	A-2, A-3, A-4, A-1	0	0-15	45-100	35-95	20-65	5-40	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
409:												
Sanpoil	0-20	Silt loam	CL-ML, ML	A-4	0	0	85-100	75-100	70-95	60-80	20-30	NP-10
	20-28	Silt loam, loam	CL-ML, ML	A-4	0	0	85-100	75-100	65-90	50-75	20-30	NP-10
	28-45	Stratified gravelly sandy loam to silt loam	ML, SM	A-2, A-4	0	0	80-100	70-100	50-90	30-70	15-25	NP-5
	45-60	Stratified very gravelly sand to sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-4, A-3	0	0-15	45-100	35-95	20-65	5-40	0-14	NP
410:												
Scala	0-6	Very fine sandy loam	ML, SM	A-4	0	0	100	100	85-95	40-55	15-25	NP-5
	6-28	Very fine sandy loam, fine sandy loam	ML, SM	A-4	0	0	100	100	70-95	40-55	15-25	NP-5
	28-60	Very fine sandy loam, fine sandy loam	ML, SM	A-4	0	0	100	100	70-95	40-55	15-25	NP-5
411:												
Sclome	0-13	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	90-95	85-90	35-45	15-25
	13-18	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-95	75-85	25-35	5-15
	18-28	Clay loam, silty clay loam	CL	A-6, A-7	0	0	100	95-100	85-95	65-85	35-45	15-20
	28-50	Stratified sandy loam to silty clay loam	CL	A-6	0	0	95-100	90-100	70-85	50-65	25-35	10-15
	50-60	Stratified loamy sand to silty clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2	0	0	95-100	85-100	70-85	25-70	25-35	5-15
412:												
Scoap	0-3	Silt loam	ML	A-4	0	0-5	85-95	80-90	75-90	60-75	20-30	NP-5
	3-12	Gravelly loam, gravelly sandy loam, very cobbly loam	SM	A-4, A-2	0-2	10-45	70-80	50-60	35-55	25-50	20-30	NP-5
	12-60	Very cobbly loam, very cobbly silt loam, very gravelly loam	GM	A-1, A-2, A-4	0-5	10-45	50-65	40-55	30-50	20-45	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
413:												
Scoap	0-14	Gravelly loam	ML, SM	A-4	0	0-5	75-85	55-75	50-70	35-65	20-30	NP-5
	14-22	Gravelly loam, gravelly sandy loam, very cobbly loam	SM	A-2, A-4	0-2	10-45	70-80	50-60	35-55	25-50	20-30	NP-5
	22-36	Very cobbly loam, very cobbly silt loam, very gravelly loam	GM	A-1, A-4, A-2	0-5	10-45	50-65	40-55	30-50	20-45	20-30	NP-5
	36-60	Very cobbly loam, very stony loam, very gravelly sandy loam	GM	A-1, A-2, A-4	10-25	20-45	50-70	40-65	30-50	20-45	20-30	NP-5
414:												
Scoap	0-14	Gravelly loam	ML, SM	A-4	0	0-5	75-85	55-75	50-70	35-65	20-30	NP-5
	14-22	Gravelly loam, gravelly sandy loam, very cobbly loam	SM	A-2, A-4	0-2	0-45	70-80	50-60	35-55	25-50	20-30	NP-5
	22-36	Very cobbly loam, very cobbly silt loam, very gravelly loam	GM	A-1, A-2, A-4	0-5	0-45	50-65	40-55	30-50	20-45	20-30	NP-5
	36-60	Very cobbly loam, very stony loam, very gravelly sandy loam	GM	A-2, A-4, A-1	10-25	20-45	50-70	40-65	30-50	20-45	20-30	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
415:												
Scoap	0-14	Gravelly loam	ML, SM	A-4	0	0-5	75-85	55-75	50-70	35-65	20-30	NP-5
	14-22	Gravelly loam, gravelly sandy loam, very cobbly loam	SM	A-4, A-2	0-2	10-45	70-80	50-60	35-55	25-50	20-30	NP-5
	22-36	Very cobbly loam, very cobbly silt loam, very gravelly loam	GM	A-2, A-4, A-1	0-5	10-45	50-65	40-55	30-50	20-45	20-30	NP-5
	36-60	Very cobbly loam, very stony loam, very gravelly sandy loam	GM	A-2, A-4, A-1	10-25	20-45	50-70	40-65	30-50	20-45	20-30	NP-5
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
416:												
Scoap	0-14	Gravelly loam	ML, SM	A-4	0	0-5	75-85	55-75	50-70	35-65	20-30	NP-5
	14-22	Gravelly loam, gravelly sandy loam, very cobbly loam	SM	A-4, A-2	0-2	10-45	70-80	50-60	35-55	25-50	20-30	NP-5
	22-36	Very cobbly loam, very cobbly silt loam, very gravelly loam	GM	A-1, A-2, A-4	0-5	10-45	50-65	40-55	30-50	20-45	20-30	NP-5
	36-60	Very cobbly loam, very stony loam, very gravelly sandy loam	GM	A-1, A-2, A-4	10-25	20-45	50-70	40-65	30-50	20-45	20-30	NP-5
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
417:												
Scrabblers------	0-3	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	60-80	30-40	NP-5
	3-11	Silt loam, sandy loam, loam	ML, SM	A-4	0	0-5	85-100	80-90	50-85	35-70	20-40	NP-10
	11-24	Gravelly sandy loam, gravelly loamy sand, sandy loam	SM	A-2, A-1	0	0-15	70-95	60-85	25-60	10-35	15-25	NP-5
	24-60	Gravelly loamy coarse sand, gravelly coarse sand, sand	SM, SP-SM	A-1	0	0-15	70-95	60-85	25-50	5-20	0-14	NP
418:												
Scrabblers------	0-3	Silt loam	ML	A-4	0	0	95-100	85-100	75-90	60-80	30-40	NP-5
	3-11	Silt loam, sandy loam, loam	ML, SM	A-4	0	0-5	85-100	80-90	50-85	35-70	20-40	NP-10
	11-24	Gravelly sandy loam, gravelly loamy sand, sandy loam	SM	A-1, A-2	0	0-15	70-95	60-85	25-60	10-35	15-25	NP-5
	24-60	Gravelly loamy coarse sand, gravelly coarse sand, sand	SM, SP-SM	A-1	0	0-15	70-95	60-85	25-50	5-20	0-14	NP
419:												
Scrabblers------	0-5	Loam	ML	A-4	0	0	95-100	85-100	75-85	50-65	30-40	NP-5
	5-13	Silt loam, sandy loam, loam	ML, SM	A-4	0	0-5	85-100	80-90	50-85	35-70	20-40	NP-10
	13-20	Gravelly sandy loam, gravelly loamy sand, sandy loam	SM	A-2, A-1	0	0-15	70-95	60-85	25-60	10-35	15-25	NP-5
	20-60	Gravelly loamy sand, loamy sand, gravelly sand	SM, SP-SM	A-1	0	0-15	70-95	60-85	25-50	5-20	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
420:												
Scrabblers------	0-5	Loam	ML	A-4	0	0	95-100	85-100	75-85	50-65	30-40	NP-5
	5-13	Silt loam, sandy loam, loam	ML, SM	A-4	0	0-5	85-100	80-90	50-85	35-70	20-40	NP-10
	13-20	Gravelly sandy loam, gravelly loamy sand, sandy loam	SM	A-1, A-2	0	0-15	70-95	60-85	25-60	10-35	15-25	NP-5
	20-60	Gravelly loamy sand, loamy sand, gravelly sand	SM, SP-SM	A-1	0	0-15	70-95	60-85	25-50	5-20	0-14	NP
421:												
Sitdown---------	0-13	Gravelly loam	ML, SM	A-4	0	0-10	75-85	65-75	55-70	40-55	30-40	NP-5
	13-60	Very gravelly loamy sand, very cobbly sand, very gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0-10	15-30	45-60	35-55	20-45	0-15	0-14	NP
422:												
Skaha----------	0-7	Loamy sand	SM	A-2	0	0-5	90-100	80-100	50-70	15-30	0-14	NP
	7-35	Gravelly loamy sand, very gravelly loamy sand, very gravelly coarse sand	GM, GP-GM, SM, SP-SM	A-1	0	0-15	50-85	45-75	25-50	5-20	0-14	NP
	35-60	Very gravelly coarse sand, extremely gravelly coarse sand, very cobbly sand	GP	A-1	0-2	10-45	40-60	20-45	5-25	0-5	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
423:												
Skaha	0-8	Gravelly loamy sand	SM	A-1	0	0-15	65-80	55-70	30-45	10-20	0-14	NP
	8-18	Gravelly loamy sand, very gravelly loamy sand, very gravelly sand	GM, GP-GM, SM, SP-SM	A-1	0	0-15	50-85	40-75	25-50	5-20	0-14	NP
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, extremely gravelly loamy sand	GP-GM, SP, SP-SM, GP	A-1	0	0-25	20-60	20-50	10-30	0-10	0-14	NP
424:												
Skaha	0-10	Extremely gravelly loamy sand	GP-GM	A-1	0	5-30	30-40	20-30	10-25	5-10	0-14	NP
	10-18	Gravelly loamy sand, very gravelly loamy sand, very gravelly sand	GM, GP-GM, SM, SP-SM	A-1	0	0-15	50-85	40-75	25-50	5-20	0-14	NP
	18-60	Very gravelly coarse sand, extremely gravelly coarse sand, extremely gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-25	20-60	20-50	10-30	0-10	0-14	NP
425:												
Skaha	0-7	Very stony sandy loam	GM, GP-GM	A-1	10-25	0-5	40-60	35-55	20-40	10-20	0-14	NP
	7-60	Extremely gravelly loamy coarse sand, very gravelly coarse sand, extremely cobbly coarse sand	GP, GP-GM, SP	A-1	0-2	15-50	30-55	20-45	10-30	0-5	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
426:												
Skaha	0-7	Very stony sandy loam	GM, GP-GM	A-1	10-25	0-5	40-60	35-55	20-40	10-20	0-14	NP
	7-60	Extremely gravelly loamy coarse sand, very gravelly coarse sand, extremely cobbly coarse sand	GP, GP-GM, SP	A-1	0-2	15-50	30-55	20-45	10-30	0-5	0-14	NP
427:												
Skaha	0-7	Very stony sandy loam	GM, GP-GM	A-1	10-25	0-5	40-60	35-55	20-40	10-20	0-14	NP
	7-60	Extremely gravelly loamy coarse sand, very gravelly coarse sand, extremely cobbly coarse sand	GP, GP-GM, SP	A-1	0-2	15-50	30-55	20-45	10-30	0-5	0-14	NP
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
428:												
Skanid	0-9	Gravelly sandy loam	SM	A-2, A-1	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	9-14	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	14-24	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
429:												
Skanid	0-9	Gravelly sandy loam	SM	A-2, A-1	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	9-14	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	14-24	Weathered bedrock			---	---	---	---	---	---	---	---
430:												
Skanid	0-9	Gravelly sandy loam	SM	A-1, A-2	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	9-14	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	14-24	Weathered bedrock			---	---	---	---	---	---	---	---
431:												
Skanid	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	5-11	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1	0	0-10	65-85	55-70	25-45	15-25	15-20	NP-5
	11-18	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
432:												
Skanid----------	0-5	Gravelly sandy loam	SM	A-2, A-1	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	5-11	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1	0	0-10	65-85	55-70	25-45	15-25	15-20	NP-5
	11-18	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	18-28	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
433:												
Skanid----------	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	5-11	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1	0	0-10	65-85	55-70	25-45	15-25	15-20	NP-5
	11-18	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	18-28	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
434:												
Skanid----------	0-9	Gravelly sandy loam	SM	A-1, A-2	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	9-14	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	14-24	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
435:												
Skanid	0-9	Gravelly sandy loam	SM	A-2, A-1	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	9-14	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	14-24	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
436:												
Skanid	0-5	Gravelly sandy loam	SM	A-2, A-1	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	5-11	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1	0	0-10	65-85	55-70	25-45	15-25	15-20	NP-5
	11-18	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
437:												
Spens	0-3	Very stony loamy sand	SM	A-1	10-25	0-10	55-75	50-65	30-45	10-20	0-14	NP
	3-15	Gravelly loamy sand	SM	A-1	0	0-15	65-80	55-70	30-45	10-20	0-14	NP
	15-60	Very cobbly loamy sand, very gravelly coarse sand, very cobbly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-5	25-45	40-70	30-60	15-30	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
438:												
Spens	0-3	Very stony loamy sand	SM	A-1	10-25	0-10	55-75	50-65	30-45	10-20	0-14	NP
	3-15	Gravelly loamy sand	SM	A-1	0	0-15	65-80	55-70	30-45	10-20	0-14	NP
	15-60	Very cobbly loamy sand, very gravelly coarse sand, very cobbly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0-5	25-45	40-70	30-60	15-30	0-10	0-14	NP
439:												
Spokane	0-10	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	10-25	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-2, A-4, A-1	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
440:												
Spokane	0-10	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	10-25	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
441:												
Spokane	0-10	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	10-25	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
442:												
Spokane	0-9	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	9-22	Gravelly coarse sandy loam, sandy loam, gravelly loam	SM	A-2, A-4, A-1	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	22-33	Gravelly coarse sandy loam, coarse sandy loam, gravelly loamy coarse sand	SM	A-2, A-1	0	0-5	60-95	55-90	15-40	10-30	0-14	NP
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
443:												
Spokane	0-9	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	9-22	Gravelly coarse sandy loam, sandy loam, gravelly loam	SM	A-2, A-4, A-1	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	22-33	Gravelly coarse sandy loam, coarse sandy loam, gravelly loamy coarse sand	SM	A-2, A-1	0	0-5	60-95	55-90	15-40	10-30	0-14	NP
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
444:												
Spokane	0-10	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	10-25	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-1, A-2, A-4	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
445:												
Spokane	0-10	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	10-25	Gravelly coarse sandy loam, gravelly sandy loam, gravelly loam	SM	A-2, A-1, A-4	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
446:												
Spokane	0-9	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	9-22	Gravelly coarse sandy loam, sandy loam, gravelly loam	SM	A-2, A-4, A-1	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	22-33	Gravelly coarse sandy loam, coarse sandy loam, gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	60-95	55-90	15-40	10-30	0-14	NP
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
Skanid	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	5-11	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1	0	0-10	65-85	55-70	25-45	15-25	15-20	NP-5
	11-18	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
447:												
Spokane	0-9	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	9-22	Gravelly coarse sandy loam, sandy loam, gravelly loam	SM	A-2, A-4, A-1	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	22-33	Gravelly coarse sandy loam, coarse sandy loam, gravelly loamy coarse sand	SM	A-2, A-1	0	0-5	60-95	55-90	15-40	10-30	0-14	NP
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
Skanid	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	5-11	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1	0	0-10	65-85	55-70	25-45	15-25	15-20	NP-5
	11-18	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
448:												
Spokane	0-9	Loam	ML, SM	A-4	0	0-5	80-90	80-90	65-80	45-60	20-30	NP-5
	9-22	Gravelly coarse sandy loam, sandy loam, gravelly loam	SM	A-1, A-4, A-2	0	0-15	60-75	55-75	35-65	20-45	15-25	NP-5
	22-33	Gravelly coarse sandy loam, coarse sandy loam, gravelly loamy coarse sand	SM	A-2, A-1	0	0-5	60-95	55-90	15-40	10-30	0-14	NP
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
448:												
Skanid----------	0-5	Gravelly sandy loam	SM	A-2, A-1	0	0-10	65-85	55-75	35-50	20-30	15-20	NP-5
	5-11	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1	0	0-10	65-85	55-70	25-45	15-25	15-20	NP-5
	11-18	Very gravelly sandy loam, very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	45-70	30-55	15-35	10-20	0-14	NP-5
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
449:												
Springdale------	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0-5	65-75	50-70	30-50	15-35	0-14	NP
	4-11	Gravelly coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-15	55-80	40-70	40-50	20-30	0-14	NP
	11-17	Very gravelly loamy coarse sand, gravelly sand, very gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-25	50-70	35-60	15-25	0-10	0-14	NP
	17-60	Very gravelly loamy coarse sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0	10-45	45-65	30-50	10-20	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
450:												
Springdale------	0-4	Gravelly sandy loam	SM	A-2, A-1	0	0-5	65-75	50-70	30-50	15-35	0-14	NP
	4-11	Gravelly coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	GM, SM	A-2, A-1	0	0-15	55-80	40-70	40-50	20-30	0-14	NP
	11-17	Very gravelly loamy coarse sand, gravelly sand, very gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-25	50-70	35-60	15-25	0-10	0-14	NP
	17-60	Very gravelly loamy coarse sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0	10-45	45-65	30-50	10-20	0-10	0-14	NP
451:												
Springdale------	0-4	Gravelly sandy loam	SM	A-2, A-1	0	0-5	65-75	50-70	30-50	15-35	0-14	NP
	4-11	Gravelly coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0-15	55-80	40-70	40-50	20-30	0-14	NP
	11-17	Very gravelly loamy coarse sand, gravelly sand, very gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-25	50-70	35-60	15-25	0-10	0-14	NP
	17-60	Very gravelly loamy coarse sand, extremely cobbly coarse sand, extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0	10-45	45-65	30-50	10-20	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
452:												
Stapaloop-------	0-7	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-80	40-50	15-20	NP-5
	7-22	Fine sandy loam, sandy loam	SM	A-4	0	0	90-100	85-100	60-75	35-50	15-20	NP-5
	22-31	Fine sandy loam, gravelly sandy loam, sandy loam	SM	A-2, A-4	0	0	85-100	60-100	55-75	30-50	15-20	NP-5
	31-60	Very fine sandy loam, gravelly fine sandy loam, loamy fine sand	SM	A-1, A-4, A-2	0	0	80-100	55-100	45-65	15-45	0-14	NP
453:												
Stapaloop-------	0-7	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-80	40-50	15-20	NP-5
	7-22	Fine sandy loam, sandy loam	SM	A-4	0	0	90-100	85-100	60-75	35-50	15-20	NP-5
	22-31	Fine sandy loam, gravelly sandy loam, sandy loam	SM	A-2, A-4	0	0	85-100	60-100	55-75	30-50	15-20	NP-5
	31-60	Very fine sandy loam, gravelly fine sandy loam, loamy fine sand	SM	A-1, A-2, A-4	0	0	80-100	55-100	45-65	15-45	0-14	NP
454:												
Stapaloop-------	0-2	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-80	40-50	15-20	NP-5
	2-17	Fine sandy loam, sandy loam	SM	A-4	0	0	90-100	85-100	60-75	35-50	15-20	NP-5
	17-38	Fine sandy loam, gravelly sandy loam, sandy loam	SM	A-4, A-2	0	0	85-100	60-100	55-75	30-50	15-20	NP-5
	38-60	Very fine sandy loam, gravelly fine sandy loam, loamy fine sand	SM	A-2, A-4, A-1	0	0	80-100	55-100	45-65	15-45	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
455:												
Stepstone-------	0-6	Loam	ML	A-4	0	0-5	90-100	90-100	85-95	60-80	20-25	NP-5
	6-18	Silt loam, loam, gravelly loam	ML	A-4	0	0-10	90-100	85-100	70-95	55-75	20-25	NP-5
	18-22	Gravelly loam, gravelly sandy loam	SM	A-2, A-4	0	5-20	70-80	55-75	45-65	25-50	15-20	NP-5
	22-60	Extremely gravelly loamy sand, very stony loamy sand, extremely stony loamy sand	GM, GP-GM, SM, SP-SM	A-1	10-35	10-30	40-65	25-65	20-40	5-15	0-14	NP
456:												
Stepstone-------	0-6	Loam	ML	A-4	0	0-5	90-100	90-100	85-95	60-80	20-25	NP-5
	6-18	Silt loam, loam, gravelly loam	ML	A-4	0	0-10	90-100	85-100	70-95	55-75	20-25	NP-5
	18-22	Gravelly loam, gravelly sandy loam	SM	A-2, A-4	0	5-20	70-80	55-75	45-65	25-50	15-20	NP-5
	22-60	Extremely gravelly loamy sand, very stony loamy sand, extremely stony loamy sand	GM, GP-GM, SM, SP-SM	A-1	10-35	10-30	40-65	25-65	20-40	5-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
457:												
Stepstone-------	0-6	Loam	ML	A-4	0	0-5	90-100	90-100	85-95	60-80	20-25	NP-5
	6-18	Silt loam, loam, gravelly loam	ML	A-4	0	0-10	90-100	85-100	70-95	55-75	20-25	NP-5
	18-22	Gravelly loam, gravelly sandy loam	SM	A-2, A-4	0	5-20	70-80	55-75	45-65	25-50	15-20	NP-5
	22-60	Extremely gravelly loamy sand, very stony loamy sand, extremely stony loamy sand	GM, GP-GM, SM, SP-SM	A-1	10-35	10-30	40-65	25-65	20-40	5-15	0-14	NP
458:												
Stepstone-------	0-9	Bouldery loam	ML	A-4	5-10	5-10	90-100	85-95	75-85	60-70	20-25	NP-5
	9-29	Cobbly loam, gravelly loam, loam	ML	A-4	0-2	10-40	85-95	80-90	70-80	50-65	20-25	NP-5
	29-60	Very gravelly loamy coarse sand, very stony loamy sand, very cobbly loamy sand	GM, GP-GM, SM, SP-SM	A-1	5-25	10-30	50-65	40-60	25-40	5-15	0-14	NP
459:												
Stevens---------	0-22	Silt loam	ML	A-4	0	0-5	85-100	80-100	70-90	50-80	30-35	NP-5
	22-38	Gravelly loam, silt loam, loam	ML, SM	A-4	0	0-5	75-90	55-85	50-80	40-75	25-30	NP-5
	38-60	Gravelly loam, gravelly sandy loam	ML, SM	A-2, A-4, A-1	0	0-5	75-85	50-75	45-70	20-55	30-35	NP-5
460:												
Stevens---------	0-22	Silt loam	ML	A-4	0	0-5	85-100	80-100	70-90	50-80	30-35	NP-5
	22-38	Gravelly loam, silt loam, loam	ML, SM	A-4	0	0-5	75-90	55-85	50-80	40-75	25-30	NP-5
	38-60	Gravelly loam, gravelly sandy loam	ML, SM	A-2, A-4, A-1	0	0-5	75-85	50-75	45-70	20-55	30-35	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
461:												
Stevens	0-22	Silt loam	ML	A-4	0	0-5	85-100	80-100	70-90	50-80	30-35	NP-5
	22-38	Gravelly loam, silt loam, loam	ML, SM	A-4	0	0-5	75-90	55-85	50-80	40-75	25-30	NP-5
	38-60	Gravelly loam, gravelly sandy loam	ML, SM	A-1, A-2, A-4	0	0-5	75-85	50-75	45-70	20-55	30-35	NP-5
462:												
Stevens	0-15	Gravelly silt loam	GM, ML	A-4	0	0-5	60-80	55-75	50-65	45-60	30-35	NP-5
	15-31	Gravelly loam, silt loam, loam	ML, SM	A-4	0	0-5	75-90	55-85	50-80	40-75	25-30	NP-5
	31-60	Gravelly loam, gravelly sandy loam	ML, SM	A-1, A-2, A-4	0	0-5	75-85	50-75	45-70	20-55	30-35	NP-5
463:												
Strat	0-11	Gravelly fine sandy loam	GM, SM	A-2	0	0-10	55-75	50-70	40-55	25-35	20-30	NP-5
	11-24	Very cobbly loam, very gravelly loam, very gravelly fine sandy loam	GC-GM, SC-SM	A-4, A-2	0	5-30	60-75	35-60	30-55	25-50	20-30	5-10
	24-60	Extremely gravelly loamy sand, extremely gravelly sand, extremely cobbly coarse sand	GP	A-1	0-20	5-40	40-50	10-30	5-20	0-5	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
464:												
Stubblefield----	0-9	Stony loam	ML, SM	A-4	5-10	5-10	75-90	65-80	55-75	40-60	20-30	NP-5
	9-24	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, SM	A-1, A-2, A-4	0-15	5-20	45-70	35-60	25-50	15-40	20-30	NP-5
	24-28	Cemented			---	---	---	---	---	---	---	---
	28-60	Gravelly fine sandy loam, very gravelly fine sandy loam, very cobbly sandy loam	GC-GM, GM, ML, SM	A-2, A-4	0-15	10-50	50-80	45-75	35-65	25-55	20-30	NP-10
465:												
Swakane----------	0-6	Cobbly loam	CL-ML, SC-SM	A-4	0-5	10-20	80-90	70-80	60-75	40-60	20-30	5-10
	6-11	Very gravelly loam, very gravelly sandy loam, very gravelly coarse sandy loam	GM	A-2, A-1	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	11-14	Extremely gravelly sandy loam, very gravelly sandy loam, very cobbly loam	GM	A-2, A-1	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
466:												
Swakane---------	0-7	Very stony loam	GC-GM	A-4, A-2	10-20	15-25	55-70	45-65	40-60	30-50	20-30	5-10
	7-11	Very gravelly loam, very gravelly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	11-14	Extremely gravelly sandy loam, very gravelly sandy loam, very cobbly loam	GM	A-1, A-2	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
467:												
Swakane---------	0-7	Very stony loam	GC-GM	A-2, A-4	10-20	15-25	55-70	45-65	40-60	30-50	20-30	5-10
	7-11	Very gravelly loam, very gravelly sandy loam, very gravelly coarse sandy loam	GM	A-1, A-2	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	11-14	Extremely gravelly sandy loam, very gravelly sandy loam, very cobbly loam	GM	A-2, A-1	0-10	10-30	35-60	25-50	15-45	10-35	20-30	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
468:												
Swipkin	0-16	Silt loam	CL-ML	A-4	0	0	100	95-100	90-100	80-95	20-30	5-10
	16-21	Silt loam, very fine sandy loam	CL-ML	A-4	0	0	90-100	80-100	80-100	75-95	20-30	5-10
	21-44	Silt loam, very fine sandy loam	CL-ML	A-4	0	0	90-100	80-100	80-100	75-95	20-30	5-10
	44-60	Silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	90-100	80-100	80-100	75-95	20-35	5-15
469:												
Swipkin	0-16	Silt loam	CL-ML	A-4	0	0	100	95-100	90-100	80-95	20-30	5-10
	16-21	Silt loam, very fine sandy loam	CL-ML	A-4	0	0	90-100	80-100	80-100	75-95	20-30	5-10
	21-44	Silt loam, very fine sandy loam	CL-ML	A-4	0	0	90-100	80-100	80-100	75-95	20-30	5-10
	44-60	Silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	90-100	80-100	80-100	75-95	20-35	5-15
470:												
Thout	0-4	Gravelly loam	GM, ML, SM	A-4	0	0-5	70-85	60-75	50-65	45-60	20-30	NP-5
	4-18	Very gravelly loam, gravelly loam, very cobbly sandy loam	GM, SM	A-2, A-4	0-10	0-20	60-80	50-70	35-65	25-50	20-30	NP-5
	18-26	Very gravelly loam, very cobbly sandy loam	GM, SM	A-2	0-10	15-25	55-80	45-55	35-55	25-35	20-30	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
471:												
Thout	0-4	Gravelly loam	GM, ML, SM	A-4	0	0-5	70-85	60-75	50-65	45-60	20-30	NP-5
	4-18	Very gravelly loam, gravelly loam, very cobbly sandy loam	GM, SM	A-2, A-4	0-10	0-20	60-80	50-70	35-65	25-50	20-30	NP-5
	18-26	Very gravelly loam, very cobbly sandy loam	GM, SM	A-2	0-10	15-25	55-80	45-55	35-55	25-35	20-30	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
472:												
Thout	0-4	Gravelly loam	GM, ML, SM	A-4	0	0-5	70-85	60-75	50-65	45-60	20-30	NP-5
	4-18	Very gravelly loam, gravelly loam, very cobbly sandy loam	GM, SM	A-4, A-2	0-10	0-20	60-80	50-70	35-65	25-50	20-30	NP-5
	18-26	Very gravelly loam, very cobbly sandy loam	GM, SM	A-2	0-10	15-25	55-80	45-55	35-55	25-35	20-30	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
473:												
Thout	0-4	Gravelly loam	GM, ML, SM	A-4	0	0-5	70-85	60-75	50-65	45-60	20-30	NP-5
	4-18	Very gravelly loam, gravelly loam, very cobbly sandy loam	GM, SM	A-2, A-4	0-10	0-20	60-80	50-70	35-65	25-50	20-30	NP-5
	18-26	Very gravelly loam, very cobbly sandy loam	GM, SM	A-2	0-10	15-25	55-80	45-55	35-55	25-35	20-30	NP-5
	26-30	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
473:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
474:												
Timentwa--------	0-18	Loam	ML, SM	A-4	0	0-5	85-100	80-95	60-85	40-65	20-30	NP-5
	18-41	Gravelly very fine sandy loam, gravelly loam, loam	ML, SM	A-2, A-4	0	0-15	70-100	60-90	50-80	30-60	15-25	NP-5
	41-56	Gravelly fine sandy loam, gravelly loam, cobbly sandy loam	GM, SM	A-1, A-2, A-4	0	0-15	60-90	55-85	35-70	20-50	15-25	NP-5
	56-60	Cemented			---	---	---	---	---	---	---	---
475:												
Timentwa--------	0-18	Loam	ML, SM	A-4	0	0-5	85-100	80-95	60-85	40-65	20-30	NP-5
	18-41	Gravelly very fine sandy loam, gravelly loam, loam	ML, SM	A-2, A-4	0	0-15	70-100	60-90	50-80	30-60	15-25	NP-5
	41-56	Gravelly fine sandy loam, gravelly loam, cobbly sandy loam	GM, SM	A-2, A-4, A-1	0	0-15	60-90	55-85	35-70	20-50	15-25	NP-5
	56-60	Cemented			---	---	---	---	---	---	---	---
476:												
Timentwa--------	0-12	Very bouldery loam	ML	A-4	10-25	10-20	90-95	80-95	70-85	50-70	20-30	NP-5
	12-20	Loam, gravelly loam, sandy loam	ML, SM	A-4, A-2	0	0-5	75-90	65-85	55-75	30-60	20-30	NP-5
	20-37	Gravelly loam, gravelly fine sandy loam, very gravelly loam	SM	A-2, A-4	0	0-10	70-80	45-75	45-65	30-50	15-25	NP-5
	37-52	Gravelly sandy loam, very gravelly loam, very cobbly loam	SM	A-2, A-4, A-1	0-10	10-35	65-80	45-75	40-60	20-40	15-25	NP-5
	52-60	Cemented			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
477:												
Timentwa--------	0-18	Loam	ML, SM	A-4	0	0-5	85-100	80-95	60-85	40-65	20-30	NP-5
	18-41	Gravelly very fine sandy loam, gravelly loam, loam	ML, SM	A-2, A-4	0	0-15	70-100	60-90	50-80	30-60	15-25	NP-5
	41-56	Gravelly fine sandy loam, cobbly loam, cobbly sandy loam	GM, SM	A-1, A-2, A-4	0	0-15	60-90	55-85	35-70	20-50	15-25	NP-5
	56-60	Cemented			---	---	---	---	---	---	---	---
Timentwa--------	0-20	Loam	ML, SM	A-4	0	0-5	85-100	80-95	60-85	40-65	20-30	NP-5
	20-37	Gravelly very fine sandy loam, gravelly loam, loam	ML, SM	A-2, A-4	0	0-15	70-100	60-90	50-80	30-60	15-25	NP-5
	37-42	Gravelly fine sandy loam, gravelly loam, cobbly sandy loam	GM, SM	A-1, A-4, A-2	0	0-15	60-90	55-85	35-70	20-50	15-25	NP-5
	42-60	Cemented			---	---	---	---	---	---	---	---
478:												
Timentwa--------	0-8	Very bouldery loam	ML	A-4	10-25	10-20	90-95	80-95	70-85	50-70	20-30	NP-5
	8-20	Loam, gravelly loam, sandy loam	ML, SM	A-2, A-4	0	0-5	75-90	65-85	55-75	30-60	20-30	NP-5
	20-37	Gravelly loam, gravelly fine sandy loam, very gravelly loam	SM	A-2, A-4	0	0-10	70-80	45-75	45-65	30-50	15-25	NP-5
	37-52	Gravelly sandy loam, very gravelly loam, very cobbly loam	SM	A-1, A-2, A-4	0-10	10-35	65-80	45-75	40-60	20-40	15-25	NP-5
	52-60	Cemented			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
478:												
Timentwa--------	0-4	Very bouldery loam	ML	A-4	10-25	10-20	90-95	80-95	70-85	50-70	20-30	NP-5
	4-36	Loam, gravelly loam, sandy loam	ML, SM	A-4, A-2	0	0-5	75-90	65-85	55-75	30-60	20-30	NP-5
	36-42	Gravelly loam, gravelly fine sandy loam, very gravelly loam	SM	A-2, A-4	0	0-10	70-80	45-75	45-65	30-50	15-25	NP-5
	42-56	Gravelly sandy loam, very gravelly loam, very cobbly loam	SM	A-1, A-2, A-4	0-10	10-35	65-80	45-75	40-60	20-40	15-25	NP-5
	56-60	Cemented			---	---	---	---	---	---	---	---
479:												
Timentwa--------	0-18	Loam	ML, SM	A-4	0	0-5	85-100	80-95	60-85	40-65	20-30	NP-5
	18-41	Gravelly very fine sandy loam, gravelly loam, loam	ML, SM	A-2, A-4	0	0-15	70-100	60-90	50-80	30-60	15-25	NP-5
	41-56	Gravelly fine sandy loam, gravelly loam, cobbly sandy loam	GM, SM	A-2, A-4, A-1	0	0-15	60-90	55-85	35-70	20-50	15-25	NP-5
	56-60	Cemented			---	---	---	---	---	---	---	---
Bakeoven--------	0-3	Very cobbly silt loam	GM, ML, SM	A-4	0-5	40-55	55-80	50-75	45-70	40-65	25-35	NP-10
	3-7	Very cobbly silt loam, very cobbly loam, extremely cobbly loam	GM, SM	A-2, A-4	0-5	40-65	40-70	35-65	30-60	25-50	25-35	NP-10
	7-11	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
480:												
Togo	0-4	Silt loam	ML	A-4	0	0-5	95-100	85-100	75-95	60-90	20-30	NP-5
	4-15	Loam, silt loam, gravelly loam	ML, SM	A-4	0	0-5	75-100	65-95	55-90	40-85	20-30	NP-5
	15-28	Very cobbly sandy loam, very gravelly sandy loam	GM, SM	A-1	0-2	15-40	50-70	40-55	25-40	15-25	15-25	NP-5
	28-60	Very gravelly sandy loam, extremely cobbly sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-2	25-50	20-70	10-65	10-35	5-20	15-25	NP-5
481:												
Togo	0-4	Silt loam	ML	A-4	0	0-5	95-100	85-100	75-95	60-90	20-30	NP-5
	4-15	Loam, silt loam, gravelly loam	ML, SM	A-4	0	0-5	75-100	65-95	55-90	40-85	20-30	NP-5
	15-28	Very cobbly sandy loam, very gravelly sandy loam	GM, SM	A-1	0-2	15-40	50-70	40-55	25-40	15-25	15-25	NP-5
	28-60	Very gravelly sandy loam, extremely cobbly sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-2	25-50	20-70	10-65	10-35	5-20	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
482:												
Togo	0-4	Silt loam	ML	A-4	0	0-5	95-100	85-100	75-95	60-90	20-30	NP-5
	4-15	Loam, silt loam, gravelly loam	ML, SM	A-4	0	0-5	75-100	65-95	55-90	40-85	20-30	NP-5
	15-28	Very cobbly sandy loam, very gravelly sandy loam	GM, SM	A-1	0-5	15-40	50-70	40-55	25-40	15-25	15-25	NP-5
	28-60	Very gravelly sandy loam, extremely cobbly sandy loam, very cobbly sandy loam	GM, GP-GM, SM, SP-SM	A-1	0-2	25-50	20-70	10-65	10-35	5-20	15-25	NP-5
483:												
Togo	0-5	Silt loam	ML	A-4	0	0-5	95-100	85-100	75-95	60-90	20-30	NP-5
	5-16	Loam, silt loam, gravelly loam	ML, SM	A-4	0	0-5	75-100	65-95	55-90	40-85	20-30	NP-5
	16-29	Very cobbly sandy loam, very gravelly sandy loam	GM, SM	A-1	0-5	15-40	50-70	40-55	25-40	15-25	15-25	NP-5
	29-60	Very gravelly sandy loam, extremely cobbly sandy loam, very cobbly sandy loam	GP-GM, SM, SP-SM, GM	A-1	0-2	25-50	20-70	10-65	10-35	5-20	15-25	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
484:												
Togo	0-6	Very stony silt loam	GM, ML, SM	A-4	10-25	5-25	70-90	60-80	55-80	40-70	20-30	NP-5
	6-16	Cobbly silt loam, cobbly loam, stony silt loam	ML, SM	A-4	0-10	15-30	85-95	75-90	55-80	40-70	20-30	NP-5
	16-30	Very gravelly sandy loam, very cobbly sandy loam	GM, SM	A-1	0-10	20-35	50-70	40-55	25-40	15-25	15-25	NP-5
	30-60	Extremely cobbly sandy loam, very gravelly sandy loam, very cobbly sandy loam	GM, SM	A-1	0-10	25-50	45-75	35-65	20-45	10-25	15-25	NP-5
Rock outcrop	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
485:												
Torboy	0-4	Fine sandy loam	SM	A-4	0	0-5	85-100	80-100	60-70	35-45	15-25	NP-5
	4-16	Sandy loam, gravelly sandy loam, fine sandy loam	SM	A-4, A-2	0	0-10	70-100	65-100	50-75	25-50	15-25	NP-5
	16-33	Gravelly loamy sand, gravelly sand	SM, SP, SP-SM	A-1	0	0-10	60-85	55-75	25-50	0-20	0-14	NP
	33-60	Very gravelly sand, gravelly loamy sand, gravelly fine sand	SM, SP, SP-SM	A-1	0	10-20	60-75	40-65	35-50	0-20	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
486:												
Torboy----------	0-4	Fine sandy loam	SM	A-4	0	0-5	85-100	80-100	60-70	35-45	15-25	NP-5
	4-16	Sandy loam, gravelly sandy loam, fine sandy loam	SM	A-2, A-4	0	0-10	70-100	65-100	50-75	25-50	15-25	NP-5
	16-33	Gravelly loamy sand, gravelly sand	SM, SP, SP-SM	A-1	0	0-10	60-85	55-75	25-50	0-20	0-14	NP
	33-60	Very gravelly sand, gravelly loamy sand, gravelly fine sand	SM, SP, SP-SM	A-1	0	10-20	60-75	40-65	35-50	0-20	0-14	NP
487: Torrifluventic Haploxerolls---	0-11	Loamy coarse sand	SM	A-1, A-2	0	0-10	90-100	80-95	35-65	15-25	0-20	NP
	11-60	Stratified extremely gravelly coarse sand to silt loam	GM, GP, SM, SP	A-1, A-3, A-4, A-2	0-10	0-40	30-100	20-95	15-55	0-50	0-20	NP-5
488:												
Tunkcreek-------	0-7	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-80	35-50	15-20	NP-5
	7-16	Fine sandy loam	SM	A-4	0	0-5	85-100	80-100	60-80	35-50	15-20	NP-5
	16-31	Loamy sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0-10	90-100	85-100	40-60	5-25	0-14	NP
	31-60	Gravelly sand, gravelly coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0	0-10	70-100	60-100	30-60	0-10	0-14	NP
489:												
Tunkcreek-------	0-7	Fine sandy loam	SM	A-4	0	0	90-100	85-100	65-80	35-50	15-20	NP-5
	7-16	Fine sandy loam	SM	A-4	0	0-5	85-100	80-100	60-80	35-50	15-20	NP-5
	16-31	Loamy sand, sand	SM, SP-SM	A-2, A-3, A-1	0	0-10	90-100	85-100	40-60	5-25	0-14	NP
	31-60	Gravelly sand, gravelly coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0	0-10	70-100	60-100	30-60	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
490:												
Tyee	0-11	Gravelly loam	SM	A-4	0	0-10	75-95	60-75	50-70	35-50	20-25	NP-5
	11-17	Gravelly loam, gravelly coarse sandy loam, sandy loam	SM	A-2, A-4, A-1	0	0-10	70-100	50-85	25-60	20-45	0-14	NP
	17-27	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
491:												
Tyee	0-13	Gravelly loam	SM	A-4	0	0-10	75-95	60-75	50-70	35-50	20-25	NP-5
	13-16	Gravelly loam, gravelly coarse sandy loam, sandy loam	SM	A-1, A-2, A-4	0	0-10	70-100	50-85	25-60	20-45	0-14	NP
	16-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
492:												
Tyee	0-11	Gravelly loam	SM	A-4	0	0-10	75-95	60-75	50-70	35-50	20-25	NP-5
	11-17	Gravelly loam, gravelly coarse sandy loam, sandy loam	SM	A-2, A-4, A-1	0	0-10	70-100	50-85	25-60	20-45	0-14	NP
	17-27	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
493:												
Tyee	0-11	Gravelly loam	SM	A-4	0	0-10	75-95	60-75	50-70	35-50	20-25	NP-5
	11-17	Gravelly loam, gravelly coarse sandy loam, sandy loam	SM	A-2, A-4, A-1	0	0-10	70-100	50-85	25-60	20-45	0-14	NP
	17-27	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Morical	0-17	Silt loam	ML	A-4	0	0-5	95-100	90-100	80-95	60-80	20-35	NP-10
	17-33	Silt loam, loam, gravelly loam	CL, SC	A-6	0	0	90-100	60-90	55-80	40-70	30-40	10-20
	33-43	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
493:												
Tyee	0-13	Gravelly loam	SM	A-4	0	0-10	75-95	60-75	50-70	35-50	20-25	NP-5
	13-16	Gravelly loam, gravelly coarse sandy loam, sandy loam	SM	A-2, A-4, A-1	0	0-10	70-100	50-85	25-60	20-45	0-14	NP
	16-26	Weathered bedrock			---	---	---	---	---	---	---	---
494:												
Tyee	0-13	Gravelly loam	SM	A-4	0	0-10	75-95	60-75	50-70	35-50	20-25	NP-5
	13-16	Gravelly loam, gravelly coarse sandy loam, sandy loam	SM	A-1, A-4, A-2	0	0-10	70-100	50-85	25-60	20-45	0-14	NP
	16-26	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
495:												
Tyee	0-13	Gravelly loam	SM	A-4	0	0-10	75-95	60-75	50-70	35-50	20-25	NP-5
	13-16	Gravelly loam, gravelly coarse sandy loam, sandy loam	SM	A-1, A-2, A-4	0	0-10	70-100	50-85	25-60	20-45	0-14	NP
	16-26	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
496:												
Typic Haplaquolls----	0-8	Fine sandy loam	SM	A-4, A-2	0	0-5	85-100	80-100	60-85	30-50	20-30	NP-5
	8-24	Fine sandy loam, very gravelly coarse sandy loam, gravelly loamy sand	GM, SM	A-1, A-2, A-4	0	0-10	40-100	35-100	25-70	10-40	15-25	NP-5
	24-60	Fine sandy loam, extremely gravelly sand, very gravelly very fine sandy loam	GM, GP, SM, SP	A-1, A-2, A-3, A-4	0	0-15	30-100	25-100	20-85	0-50	15-25	NP-5
497:												
Typic Xerorthents----	0-5	Loam	ML, SM	A-2, A-4	0	0	90-100	85-100	60-95	30-60	20-30	NP-5
	5-9	Loam, gravelly loam, cobbly sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0-15	65-95	60-90	45-85	25-60	20-30	NP-10
	9-60	Silty clay loam, gravelly sandy loam, sandy loam	SC-SM, SM	A-1, A-2, A-4, A-6	0-5	0-25	70-100	60-80	20-55	10-50	20-40	NP-20
Typic Xerochrepts----	0-7	Gravelly sandy loam	SC-SM	A-1, A-2, A-4	0	0-25	65-95	60-85	40-75	20-45	20-30	5-10
	7-22	Gravelly silty clay loam, gravelly loam, very gravelly coarse sandy loam	GC-GM, CL, CL-ML, GC	A-1, A-2, A-4, A-6	0-5	0-15	55-85	45-75	30-70	15-65	25-40	5-20
	22-31	Gravelly silt loam, gravelly sandy loam, very gravelly loam	SC, CL, CL-ML, SC-SM	A-1, A-2, A-4, A-6	0	0-10	60-95	50-90	35-85	20-75	25-35	5-15
	31-60	Silty clay loam, silt loam, fine sandy loam	SC, CL	A-6, A-7	0	0	95-100	85-100	70-95	40-90	30-45	10-20

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
498:												
Ultic Haploxerolls---	0-13	Gravelly loam	CL-ML, GC-GM, SC-SM	A-4	0	0-10	70-80	60-75	50-70	35-55	15-25	5-10
	13-28	Gravelly sandy loam, fine sandy loam, clay loam	SM, SC-SM, CL, CL-ML	A-1, A-2, A-4, A-6	0	0-20	70-95	65-90	30-85	20-70	15-35	NP-15
	28-60	Very gravelly sand, gravelly loamy sand, gravelly sandy loam	GP, CL, GM, ML	A-1, A-2, A-4, A-6	0	0-30	40-100	35-90	20-85	0-70	20-40	NP-15
499:												
Uncas----------	0-7	Muck	PT	A-8	0	0	---	---	---	---	---	---
	7-11	Silt loam	ML	A-4	0	0	100	100	95-100	85-95	30-40	NP-10
	11-52	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	50-95	30-40	NP-10
	52-60	Silt loam, silty clay loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-95	30-40	5-15
500:												
Vanbrunt--------	0-3	Very stony sandy loam	SM	A-1, A-2	10-25	10-35	60-80	50-70	30-50	15-30	15-25	NP-5
	3-10	Gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0-5	10-30	60-80	50-75	30-50	15-30	15-25	NP-5
	10-25	Extremely cobbly sandy loam, very cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-5	25-55	45-60	35-50	20-35	10-25	0-14	NP
	25-29	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
501:												
Vanbrunt--------	0-3	Very stony sandy loam	SM	A-1, A-2	10-25	10-35	60-80	50-70	30-50	15-30	15-25	NP-5
	3-10	Gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0-5	10-30	60-80	50-75	30-50	15-30	15-25	NP-5
	10-25	Extremely cobbly sandy loam, very cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-5	25-55	45-60	35-50	20-35	10-25	0-14	NP
	25-29	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
502:												
Vanbrunt--------	0-3	Very stony sandy loam	SM	A-1, A-2	10-25	10-35	60-80	50-70	30-50	15-30	15-25	NP-5
	3-10	Gravelly sandy loam, very gravelly sandy loam, cobbly sandy loam	SM	A-1, A-2	0-5	10-30	60-80	50-75	30-50	15-30	15-25	NP-5
	10-25	Extremely cobbly sandy loam, very cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-5	25-55	45-60	35-50	20-35	10-25	0-14	NP
	25-29	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
503:												
Wannacott-------	0-10	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-80	20-30	NP-5
	10-15	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-80	20-30	NP-5
	15-29	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	80-95	65-90	25-40	5-15
	29-35	Gravelly sandy loam	SM, GM	A-1, A-2	0	0	55-80	50-75	30-55	15-30	20-30	NP-5
	35-60	Gravelly sandy loam, very gravelly sandy loam	GM, SM	A-1, A-2	0	0	40-80	35-75	20-55	10-25	20-30	NP-5
504:												
Wannacott-------	0-10	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-80	20-30	NP-5
	10-15	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-80	20-30	NP-5
	15-29	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	80-95	65-90	25-40	5-15
	29-35	Gravelly sandy loam	SM, GM	A-1, A-2	0	0	55-80	50-75	30-55	15-30	20-30	NP-5
	35-60	Gravelly sandy loam, very gravelly sandy loam	SM, GM	A-1, A-2	0	0	40-80	35-75	20-55	10-25	20-30	NP-5
505:												
Wapal-----------	0-5	Gravelly sandy loam	SM	A-2	0	0-10	65-85	55-75	40-60	25-35	15-20	NP-5
	5-11	Coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	SM	A-1, A-2	0	0-15	60-95	50-90	30-60	15-30	15-20	NP-5
	11-60	Very gravelly loamy sand, very gravelly sand, very gravelly coarse sand	SP-SM, SP, GP, GP-GM	A-1	0	10-15	45-65	35-55	15-25	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
506:												
Wapal	0-7	Cobbly sandy loam	SM	A-1, A-2	0-10	20-40	80-100	75-90	40-60	20-30	0-14	NP
	7-15	Gravelly sandy loam, cobbly sandy loam, very cobbly sandy loam	GM, SM	A-1	0-10	15-65	45-80	45-75	25-50	15-25	0-14	NP
	15-60	Very gravelly sand, extremely gravelly coarse sand, extremely cobbly coarse sand	GP	A-1	0-10	15-50	20-50	15-45	5-30	0-5	0-14	NP
507:												
Wapal	0-5	Gravelly sandy loam	SM	A-2	0	0-10	65-85	55-75	40-60	25-35	15-20	NP-5
	5-11	Coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	SM	A-1, A-2	0	0-15	60-95	50-90	30-60	15-30	15-20	NP-5
	11-60	Very gravelly loamy sand, very gravelly sand, very gravelly coarse sand	SP-SM, GP, GP-GM, SP	A-1	0	10-15	45-65	35-55	15-25	0-10	0-14	NP
508:												
Wapal	0-5	Gravelly sandy loam	SM	A-2	0	0-10	65-85	55-75	40-60	25-35	15-20	NP-5
	5-11	Coarse sandy loam, gravelly sandy loam, very gravelly sandy loam	SM	A-1, A-2	0	0-15	60-95	50-90	30-60	15-30	15-20	NP-5
	11-60	Very gravelly loamy sand, very gravelly sand, very gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	10-15	45-65	35-55	15-25	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
509:												
Wellscreek------	0-10	Channery loam	SM, ML, GM	A-2, A-4	0	0-2	60-85	50-75	40-70	30-55	15-25	NP-5
	10-24	Very channery loam, channery loam, very channery silt loam	CL-ML, GC-GM, SC-SM	A-2, A-4	0	0-10	50-85	40-75	35-75	25-60	20-30	5-10
	24-60	Very channery loam, very cobbly loam, very channery clay loam	GC-GM, GM	A-2, A-4	0-10	15-45	35-60	25-50	20-50	15-40	25-35	5-10
510:												
Wellscreek------	0-10	Channery loam	GM, ML, SM	A-2, A-4	0	0-2	60-85	50-75	40-70	30-55	15-25	NP-5
	10-24	Very channery loam, channery loam, very channery silt loam	SC-SM, CL-ML, GC-GM	A-2, A-4	0	0-10	50-85	40-75	35-75	25-60	20-30	5-10
	24-60	Very channery loam, very cobbly loam, very channery clay loam	GM, GC-GM	A-2, A-4	0-10	15-45	35-60	25-50	20-50	15-40	25-35	5-10

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
511:												
Wellscreek------	0-6	Very channery loam	GM	A-2, A-4	0	0-10	50-65	40-50	35-50	25-40	15-25	NP-5
	6-14	Very channery loam, channery loam, very channery silt loam	CL-ML, SC-SM, GC-GM	A-2, A-4	0	0-10	50-85	40-75	35-75	25-60	20-30	5-10
	14-26	Extremely cobbly silt loam, very channery loam, extremely channery clay loam	GM, GC-GM	A-4, A-2	0-10	10-45	35-65	25-55	20-55	15-45	25-35	5-10
	26-42	Extremely channery loam, very cobbly silt loam, very channery loam	GM, GC-GM	A-4, A-2	0-10	10-45	35-65	25-55	20-55	15-45	25-35	5-10
	42-60	Extremely channery loam, very cobbly loam, very channery clay loam	GC-GM, GM	A-4, A-2	0-10	15-45	35-60	25-50	20-50	15-40	25-35	5-10
512:												
Whitestone------	0-6	Loam	ML	A-4	0	0-10	90-95	85-90	75-85	55-65	20-25	NP-5
	6-29	Gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1	0-10	0-40	45-60	40-55	25-35	15-25	15-20	NP-5
	29-60	Very gravelly sandy loam, very cobbly sandy loam, very gravelly loamy sand	GM	A-1	0-10	10-45	40-55	35-50	25-35	10-20	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
513:												
Whitestone------	0-16	Gravelly sandy loam	SM	A-2	0	0-10	75-85	60-75	45-60	25-35	15-20	NP-5
	16-32	Gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1	0-10	0-40	45-60	40-55	25-35	15-25	15-20	NP-5
	32-60	Very gravelly sandy loam, very cobbly sandy loam, very gravelly loamy sand	GM	A-1	0-10	10-45	40-55	35-50	25-35	10-20	15-20	NP-5
514:												
Whitestone------	0-16	Gravelly sandy loam	SM	A-2	0	0-10	75-85	60-75	45-60	25-35	15-20	NP-5
	16-32	Gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1	0-10	0-40	45-60	40-55	25-35	15-25	15-20	NP-5
	32-60	Very gravelly sandy loam, very cobbly sandy loam, very gravelly loamy sand	GM	A-1	0-10	10-45	40-55	35-50	25-35	10-20	15-20	NP-5
515:												
Whitestone------	0-10	Very stony sandy loam	SM	A-1, A-2	10-25	10-20	60-80	55-75	35-50	15-30	15-20	NP-5
	10-27	Very cobbly sandy loam, very gravelly sandy loam	GM	A-1	0-10	15-30	40-55	35-50	20-35	10-20	15-20	NP-5
	27-60	Very cobbly sandy loam, very gravelly sandy loam, very gravelly loamy sand	GM	A-1	0-10	20-30	40-50	35-45	15-30	10-20	15-20	NP-5

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
516:												
Whitestone------	0-16	Gravelly sandy loam	SM	A-2	0	0-10	75-85	60-75	45-60	25-35	15-20	NP-5
	16-32	Gravelly sandy loam, very gravelly sandy loam, very cobbly sandy loam	GM	A-1	0-10	0-40	45-60	40-55	25-35	15-25	15-20	NP-5
	32-60	Very gravelly sandy loam, very cobbly sandy loam, very gravelly loamy sand	GM	A-1	0-10	10-45	40-55	35-50	25-35	10-20	15-20	NP-5
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
517:												
Wilmont---------	0-5	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-85	30-40	NP-5
	5-12	Silt loam, loam, channery silt loam	GM, ML, SM	A-4	0-10	0-15	65-95	50-85	45-80	35-65	30-40	NP-5
	12-27	Very channery loam, very channery sandy loam	GM	A-2, A-1	0-10	0-25	40-60	30-50	20-50	10-35	20-30	NP-5
	27-47	Extremely channery loam, very channery sandy loam, extremely channery loamy sand	GM, GP-GM	A-1, A-2	0-10	0-25	30-60	20-50	15-40	5-30	15-25	NP-5
	47-60	Extremely channery sandy loam, very channery loamy sand, extremely channery sand	GP, GM	A-1	0-20	0-30	30-50	15-40	10-30	0-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
518:												
Wilmont	0-5	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-85	30-40	NP-5
	5-12	Silt loam, loam, channery silt loam	GM, ML, SM	A-4	0-10	0-15	65-95	50-85	45-80	35-65	30-40	NP-5
	12-27	Very channery loam, very channery sandy loam	GM	A-2, A-1	0-10	0-25	40-60	30-50	20-50	10-35	20-30	NP-5
	27-47	Extremely channery loam, very channery sandy loam, extremely channery loamy sand	GM, GP-GM	A-2, A-1	0-10	0-25	30-60	20-50	15-40	5-30	15-25	NP-5
	47-60	Extremely channery sandy loam, very channery loamy sand, extremely channery sand	GP, GM	A-1	0-20	0-30	30-50	15-40	10-30	0-15	0-14	NP
519:												
Wilmont	0-4	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-85	30-40	NP-5
	4-11	Silt loam, loam, channery silt loam	GM, ML, SM	A-4	0-10	0-15	65-95	50-85	45-80	35-65	30-40	NP-5
	11-21	Very channery loam, very channery sandy loam	GM	A-1, A-2	0-10	0-25	40-60	30-50	20-50	10-35	20-30	NP-5
	21-36	Extremely channery loam, very channery sandy loam, extremely channery loamy sand	GM, GP-GM	A-1, A-2	0-10	0-25	30-60	20-50	15-40	5-30	15-25	NP-5
	36-60	Extremely channery sandy loam, very channery loamy sand, extremely channery sand	GM, GP	A-1	0-20	0-30	30-50	15-40	10-30	0-15	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
520:												
Wilmont	0-4	Silt loam	ML	A-4	0	0	90-100	85-100	80-95	65-85	30-40	NP-5
	4-11	Silt loam, loam, channery silt loam	ML, SM, GM	A-4	0-10	0-15	65-95	50-85	45-80	35-65	30-40	NP-5
	11-21	Very channery loam, very channery sandy loam	GM	A-2, A-1	0-10	0-25	40-60	30-50	20-50	10-35	20-30	NP-5
	21-36	Extremely channery loam, very channery sandy loam, extremely channery loamy sand	GP-GM, GM	A-1, A-2	0-10	0-25	30-60	20-50	15-40	5-30	15-25	NP-5
	36-60	Extremely channery sandy loam, very channery loamy sand, extremely channery sand	GM, GP	A-1	0-20	0-30	30-50	15-40	10-30	0-15	0-14	NP
521:												
Winchester	0-9	Loamy coarse sand	SM	A-1, A-2	0	0-5	95-100	85-100	30-50	15-30	0-14	NP
	9-60	Coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0	0-5	95-100	85-100	30-55	0-10	0-14	NP
522:												
Winchester	0-9	Loamy coarse sand	SM	A-1, A-2	0	0-5	95-100	85-100	30-50	15-30	0-14	NP
	9-60	Coarse sand, sand	SP-SM, SP	A-2, A-3, A-1	0	0-5	95-100	85-100	30-55	0-10	0-14	NP
523:												
Winchester	0-9	Loamy coarse sand	SM	A-2, A-1	0	0-5	95-100	85-100	30-50	15-30	0-14	NP
	9-60	Coarse sand, sand	SP, SP-SM	A-2, A-3, A-1	0	0-5	95-100	85-100	30-55	0-10	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
524:												
Winchester------	0-9	Loamy coarse sand	SM	A-2, A-1	0	0-5	95-100	85-100	30-50	15-30	0-14	NP
	9-60	Coarse sand, sand	SP, SP-SM	A-2, A-3, A-1	0	0-5	95-100	85-100	30-55	0-10	0-14	NP
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
525:												
Winthrop--------	0-10	Stony sandy loam	GM, SM	A-1	5-10	5-10	55-80	50-75	30-50	15-25	15-20	NP-5
	10-60	Very gravelly sand, extremely gravelly sand, extremely gravelly coarse sand	GP, SP	A-1	0-10	0-30	30-60	20-50	10-25	0-5	0-14	NP
526:												
Wynhoff---------	0-7	Stony loam	SM, GM	A-1, A-2, A-4	5-10	10-15	60-75	50-65	35-60	20-50	20-30	NP-5
	7-12	Gravelly loam, gravelly sandy loam	GM, ML, SM	A-4, A-2	0	0-10	60-95	50-90	45-85	30-75	20-30	NP-5
	12-28	Very gravelly loam, very gravelly fine sandy loam, very cobbly sandy loam	GM	A-2, A-4, A-1	0-5	10-40	35-65	25-55	15-50	10-40	20-30	NP-5
	28-34	Very gravelly loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM	A-2, A-1	0-10	10-40	35-60	25-50	15-45	10-35	20-30	NP-5
	34-38	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
527:												
Wynhoff---------	0-7	Stony loam	SM, GM	A-1, A-2, A-4	5-10	10-15	60-75	50-65	35-60	20-50	20-30	NP-5
	7-12	Gravelly loam, gravelly sandy loam	ML, GM, SM	A-4, A-2	0	0-10	60-95	50-90	45-85	30-75	20-30	NP-5
	12-28	Very gravelly loam, very gravelly fine sandy loam, very cobbly sandy loam	GM	A-2, A-4, A-1	0-5	10-40	35-65	25-55	15-50	10-40	20-30	NP-5
	28-34	Very gravelly loam, extremely gravelly coarse sandy loam, very cobbly sandy loam	GM	A-2, A-1	0-10	10-40	35-60	25-50	15-45	10-35	20-30	NP-5
	34-38	Unweathered bedrock			---	---	---	---	---	---	---	---
528:												
Xeric Torriorthents--	0-19	Gravelly fine sandy loam	SM	A-1, A-2	0	0-10	65-85	55-75	40-60	15-20	15-25	NP-5
	19-60	Very cobbly coarse sand, sand, silty clay loam	GC-GM, GP, ML, SC-SM	A-1, A-2, A-3, A-4	0	0-45	45-95	40-90	20-85	0-75	15-40	NP-15
529:												
Xeric Torriorthents--	0-8	Extremely cobbly loamy sand	GP-GM, GP	A-1	0-5	35-45	40-50	20-35	10-20	0-10	0-14	NP
	8-60	Cobbly loamy sand, very cobbly coarse sand, sand, silty clay loam	SC-SM, ML, GC-GM, GP	A-1, A-3, A-4, A-2	0	0-45	45-95	40-90	20-85	0-75	15-40	NP-15

Table 17.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
530:												
Xerochrepts-----	0-3	Very cobbly loam	GM	A-4, A-2	0-10	25-45	50-70	40-65	35-50	25-40	20-30	NP-5
	3-24	Very gravelly loam, extremely cobbly loam, extremely cobbly sandy loam	GP-GM, GM	A-1, A-2, A-4	0-10	10-75	20-65	15-55	15-45	5-40	20-30	NP-5
	24-60	Extremely gravelly loam, extremely cobbly loam, extremely cobbly sandy loam	GP-GM, GM	A-1	0-10	30-85	30-55	20-30	5-25	5-20	20-30	NP-5
Rubble land-----	0-60	Fragmental material			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
531:												
Water-----------	---	---	---	---	---	---	---	---	---	---	---	---
532:												
Dam----------	---	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
1:												
Achimin	0-18	12-18	1.15-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	18-34	35-45	1.40-1.50	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.37	.37			
	34-60	18-27	1.40-1.50	0.2-2.0	0.19-0.21	0.0-2.9	0.5-1.0	.43	.43			
2:												
Achimin	0-18	12-18	1.15-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	18-34	35-45	1.40-1.50	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.37	.37			
	34-60	18-27	1.40-1.50	0.2-2.0	0.19-0.21	0.0-2.9	0.5-1.0	.43	.43			
Calcic Pachic Haploxerolls	0-24	10-25	1.15-1.30	0.6-2.0	0.18-0.20	0.0-2.9	2.0-4.0	.49	.55	5	5	56
	24-42	10-25	1.35-1.45	0.6-6.0	0.13-0.20	0.0-2.9	1.0-2.0	.55	.55			
	42-60	8-30	1.35-1.45	0.2-6.0	0.13-0.20	3.0-5.9	0.5-1.0	.43	.55			
3:												
Aeneas	0-10	2-10	1.20-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-3.0	.32	.32	3	3	86
	10-27	2-10	1.35-1.50	2.0-6.0	0.10-0.15	0.0-2.9	0.5-1.0	.32	.37			
	27-60	0-2	1.40-1.55	6.0-20.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.10			
4:												
Aeneas	0-10	2-10	1.20-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-3.0	.32	.32	3	3	86
	10-27	2-10	1.35-1.50	2.0-6.0	0.10-0.15	0.0-2.9	0.5-1.0	.32	.37			
	27-60	0-2	1.40-1.55	6.0-20.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.10			
5:												
Ahtanum	0-12	5-15	1.20-1.40	0.6-2.0	0.05-0.15	0.0-2.9	1.0-3.0	.55	.55	3	4L	86
	12-24	5-15	1.30-1.50	0.6-2.0	0.05-0.15	0.0-2.9	1.0-2.0	.55	.55			
	24-25	---	1.45-1.65	---	---	---	---	---	---			
	25-60	5-15	1.40-1.60	0.2-0.6	0.00-0.00	0.0-2.9	0.5-1.0	.55	.55			
6:												
Aits	0-4	5-15	0.75-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.32	.32	3	5	56
	4-13	5-18	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.32	.32			
	13-27	10-18	1.50-1.60	0.6-2.0	0.12-0.18	0.0-2.9	0.5-1.0	.17	.28			
	27-60	8-18	1.70-2.00	0.06-0.2	0.10-0.17	0.0-2.9	0.0-0.5	.17	.32			
7:												
Aits	0-4	5-15	0.75-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.32	.32	3	5	56
	4-13	5-18	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.32	.32			
	13-27	10-18	1.50-1.60	0.6-2.0	0.12-0.18	0.0-2.9	0.5-1.0	.17	.28			
	27-60	8-18	1.70-2.00	0.06-0.2	0.10-0.17	0.0-2.9	0.0-0.5	.17	.32			
8:												
Aits	0-4	5-15	0.75-0.85	0.6-2.0	0.20-0.24	0.0-2.9	2.0-4.0	.32	.32	4	5	56
	4-12	5-18	0.75-0.85	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.32	.32			
	12-33	5-15	1.50-1.60	0.6-2.0	0.12-0.15	0.0-2.9	0.5-1.0	.24	.37			
	33-42	5-10	1.50-1.60	0.6-2.0	0.07-0.12	0.0-2.9	0.5-1.0	.24	.32			
	42-60	0-5	1.50-1.65	2.0-6.0	0.05-0.07	0.0-2.9	0.0-0.5	.05	.17			
9:												
Anders	0-14	10-18	1.20-1.30	0.6-2.0	0.17-0.20	0.0-2.9	1.0-2.0	.43	.43	2	5	56
	14-23	10-18	1.30-1.40	0.6-2.0	0.15-0.19	0.0-2.9	0.5-1.0	.32	.49			
	23-27	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
10:												
Andic Cryaquepts	0-9	5-15	0.80-0.95	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	9-17	8-15	1.30-1.40	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.32	.37			
	17-22	5-15	1.40-1.50	0.6-2.0	0.08-0.17	0.0-2.9	0.0-1.0	.20	.28			
	22-60	1-10	1.45-1.65	6.0-20.0	0.02-0.12	0.0-2.9	0.0-0.5	.10	.28			
11:												
Annum	0-12	10-18	1.25-1.35	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.49	.49	4	5	56
	12-24	18-30	1.35-1.45	0.6-2.0	0.17-0.21	3.0-5.9	1.0-2.0	.49	.49			
	24-46	18-35	1.50-1.60	0.6-2.0	0.14-0.19	3.0-5.9	0.5-1.0	.32	.37			
	46-53	10-20	1.45-1.55	0.6-2.0	0.09-0.14	0.0-2.9	0.0-0.5	.28	.37			
	53-63	---	---	---	---	---	---	---	---			
12:												
Annum	0-15	10-18	1.25-1.35	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.49	.49	4	5	56
	15-24	18-30	1.35-1.45	0.6-2.0	0.17-0.21	3.0-5.9	1.0-2.0	.49	.49			
	24-45	18-35	1.50-1.60	0.6-2.0	0.14-0.19	3.0-5.9	0.5-1.0	.32	.37			
	45-54	10-20	1.45-1.55	0.6-2.0	0.09-0.14	0.0-2.9	0.0-0.5	.28	.37			
	54-64	---	---	---	---	---	---	---	---			
13:												
Annum	0-15	10-18	1.25-1.35	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.49	.49	4	5	56
	15-24	18-30	1.35-1.45	0.6-2.0	0.17-0.21	3.0-5.9	1.0-2.0	.49	.49			
	24-45	18-35	1.50-1.60	0.6-2.0	0.14-0.19	3.0-5.9	0.5-1.0	.32	.37			
	45-54	10-20	1.45-1.55	0.6-2.0	0.09-0.14	0.0-2.9	0.0-0.5	.28	.37			
	54-64	---	---	---	---	---	---	---	---			
Annum	0-12	10-18	1.25-1.35	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.49	.49	4	5	56
	12-24	18-30	1.35-1.45	0.6-2.0	0.17-0.21	3.0-5.9	1.0-2.0	.49	.49			
	24-46	18-35	1.50-1.60	0.6-2.0	0.14-0.19	3.0-5.9	0.5-1.0	.32	.37			
	46-53	10-20	1.45-1.55	0.6-2.0	0.09-0.14	0.0-2.9	0.0-0.5	.28	.37			
	53-63	---	---	---	---	---	---	---	---			
14:												
Apex	0-3	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.32	.37	3	5	56
	3-13	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.28	.37			
	13-30	5-18	1.55-1.65	0.6-2.0	0.08-0.18	0.0-2.9	0.5-1.0	.17	.37			
	30-60	5-18	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.32			
15:												
Apex	0-3	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.32	.37	3	5	56
	3-13	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.28	.37			
	13-30	5-18	1.55-1.65	0.6-2.0	0.08-0.18	0.0-2.9	0.5-1.0	.17	.37			
	30-60	5-18	1.60-1.80	0.6-2.0	0.07-0.15	0.0-2.9	0.0-0.5	.17	.32			
16:												
Apex	0-3	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.32	.37	3	5	56
	3-13	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.28	.37			
	13-30	5-18	1.55-1.65	0.6-2.0	0.08-0.18	0.0-2.9	0.5-1.0	.17	.37			
	30-60	5-18	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.32			
17:												
Apex	0-3	10-18	0.75-0.85	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	3-12	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.28	.37			
	12-27	5-18	1.55-1.65	0.6-2.0	0.08-0.18	0.0-2.9	0.5-1.0	.17	.37			
	27-60	5-18	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.32			
18:												
Apex	0-3	10-18	0.75-0.85	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	3-12	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.28	.37			
	12-27	5-18	1.55-1.65	0.6-2.0	0.08-0.18	0.0-2.9	0.5-1.0	.17	.37			
	27-60	5-18	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.32			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
19:												
Apex	0-3	10-18	0.75-0.85	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	3-12	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.28	.37			
	12-27	5-18	1.55-1.65	0.6-2.0	0.08-0.18	0.0-2.9	0.5-1.0	.17	.37			
	27-60	5-18	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.32			
20:												
Aquic Xerofluvents	0-3	8-15	1.40-1.50	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.37	.37	2	5	56
	3-15	5-12	1.45-1.60	2.0-6.0	0.08-0.14	0.0-2.9	1.0-2.0	.24	.28			
	15-60	2-7	1.50-1.60	6.0-20.0	0.04-0.10	0.0-2.9	0.0-1.0	.10	.37			
21:												
Aquic Xerofluvents	0-5	5-15	1.40-1.50	2.0-6.0	0.11-0.15	0.0-2.9	1.0-3.0	.24	.24	1	3	86
	5-60	2-7	1.50-1.60	6.0-20.0	0.04-0.10	0.0-2.9	0.0-2.0	.10	.32			
22:												
Aquic Xerofluvents	0-15	5-10	1.30-1.50	2.0-6.0	0.10-0.14	0.0-2.9	1.0-3.0	.32	.32	4	3	86
	15-43	5-12	1.45-1.60	2.0-6.0	0.08-0.14	0.0-2.9	1.0-2.0	.24	.28			
	43-60	2-7	1.50-1.60	6.0-20.0	0.04-0.10	0.0-2.9	0.0-1.0	.10	.37			
23:												
Badge	0-10	10-20	1.20-1.35	0.6-2.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.37	5	7	38
	10-38	24-35	1.25-1.45	0.2-0.6	0.09-0.12	0.0-2.9	0.0-1.0	.20	.37			
	38-60	15-25	1.30-1.50	0.6-2.0	0.08-0.11	0.0-2.9	0.0-1.0	.10	.43			
24:												
Badge	0-10	10-20	1.20-1.35	0.6-2.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.37	5	7	38
	10-38	24-35	1.25-1.45	0.2-0.6	0.09-0.12	0.0-2.9	0.0-1.0	.20	.37			
	38-60	15-25	1.30-1.50	0.6-2.0	0.08-0.11	0.0-2.9	0.0-1.0	.10	.43			
Rubble land	0-60	---	---	---	---	---	---	---	---	---	---	---
25:												
Badland	0-60	---	---	---	---	---	---	---	---	---	---	---
26:												
Bakeoven	0-3	15-25	1.25-1.35	0.6-2.0	0.12-0.16	0.0-2.9	1.0-3.0	.10	.37	1	8	0
	3-7	15-25	1.35-1.45	0.6-2.0	0.08-0.15	0.0-2.9	1.0-2.0	.10	.32			
	7-11	---	---	---	---	---	---	---	---			
27:												
Bakeoven	0-3	15-25	1.25-1.35	0.6-2.0	0.12-0.16	0.0-2.9	1.0-3.0	.10	.37	1	8	0
	3-7	15-25	1.35-1.45	0.6-2.0	0.08-0.15	0.0-2.9	1.0-2.0	.10	.32			
	7-11	---	---	---	---	---	---	---	---			
Olical	0-15	10-18	1.35-1.55	0.6-2.0	0.22-0.25	0.0-2.9	2.0-3.0	.43	.43	3	5	56
	15-23	10-18	1.40-1.65	0.6-2.0	0.16-0.20	0.0-2.9	1.0-2.0	.49	.55			
	23-38	10-18	1.40-1.50	0.6-2.0	0.15-0.18	0.0-2.9	0.5-1.0	.32	.55			
	38-51	10-18	1.45-1.60	0.6-2.0	0.09-0.14	0.0-2.9	0.0-0.5	.20	.55			
	51-55	---	---	---	---	---	---	---	---			
28:												
Bakeoven	0-3	15-25	1.25-1.35	0.6-2.0	0.12-0.16	0.0-2.9	1.0-3.0	.10	.37	1	8	0
	3-7	15-25	1.35-1.45	0.6-2.0	0.08-0.15	0.0-2.9	1.0-2.0	.10	.32			
	7-11	---	---	---	---	---	---	---	---			
Timentwa	0-18	10-18	1.10-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0	.43	.43	4	2	134
	18-41	5-18	1.10-1.40	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.28	.43			
	41-56	3-10	1.45-1.65	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.17	.43			
	56-60	---	1.50-1.70	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
29:												
Baldknob	0-4	8-18	1.35-1.45	0.6-2.0	0.11-0.15	0.0-2.9	2.0-3.0	.20	.28	1	7	38
	4-14	8-18	1.40-1.60	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	14-18	---	---	---	---	---	---	---	---			
Thout	0-4	8-14	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.28	2	6	48
	4-18	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	1.0-2.0	.20	.32			
	18-26	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.5-1.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
30:												
Baldknob	0-4	8-18	1.35-1.45	0.6-2.0	0.11-0.15	0.0-2.9	2.0-3.0	.20	.28	1	7	38
	4-14	8-18	1.40-1.60	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	14-18	---	---	---	---	---	---	---	---			
Thout	0-4	8-14	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.28	2	6	48
	4-18	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	1.0-2.0	.20	.32			
	18-26	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.5-1.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
31:												
Barnellcreek	0-26	5-15	0.65-0.85	0.6-2.0	0.21-0.24	0.0-2.9	2.0-4.0	.37	.37	4	2	134
	26-42	5-15	1.45-1.65	0.6-2.0	0.09-0.14	0.0-2.9	1.0-2.0	.20	.32			
	42-60	3-12	1.70-2.00	0.06-0.2	0.05-0.10	0.0-2.9	0.5-1.0	.15	.32			
32:												
Bearspring	0-12	11-16	1.30-1.45	0.6-2.0	0.14-0.17	0.0-2.9	2.0-3.0	.24	.32	4	5	56
	12-35	8-14	1.40-1.55	0.6-2.0	0.07-0.13	0.0-2.9	1.0-2.0	.15	.32			
	35-50	5-12	1.45-1.60	2.0-6.0	0.05-0.12	0.0-2.9	0.5-1.0	.10	.32			
	50-60	2-8	1.40-1.60	2.0-6.0	0.02-0.08	0.0-2.9	0.0-0.5	.05	.32			
33:												
Bearspring	0-6	11-16	1.30-1.45	0.6-2.0	0.14-0.18	0.0-2.9	2.0-3.0	.20	.32	4	6	48
	6-11	10-15	1.35-1.50	0.6-2.0	0.12-0.16	0.0-2.9	1.0-2.0	.17	.32			
	11-27	8-14	1.40-1.60	2.0-6.0	0.07-0.14	0.0-2.9	1.0-2.0	.15	.37			
	27-50	5-12	1.40-1.60	2.0-6.0	0.04-0.10	0.0-2.9	0.5-1.0	.10	.37			
	50-60	2-8	1.40-1.60	2.0-6.0	0.02-0.08	0.0-2.9	0.0-0.5	.05	.37			
34:												
Bernhill	0-4	12-18	1.30-1.50	0.6-2.0	0.18-0.20	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	4-27	12-18	1.35-1.55	0.6-2.0	0.16-0.20	0.0-2.9	0.5-1.0	.43	.43			
	27-36	18-35	1.40-1.60	0.6-2.0	0.14-0.18	3.0-5.9	0.0-0.5	.20	.43			
	36-60	10-18	1.50-1.70	0.6-2.0	0.16-0.18	0.0-2.9	0.0-0.5	.15	.43			
35:												
Bernhill	0-4	12-18	1.30-1.50	0.6-2.0	0.18-0.20	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	4-27	12-18	1.35-1.55	0.6-2.0	0.16-0.20	0.0-2.9	0.5-1.0	.43	.43			
	27-36	18-35	1.40-1.60	0.6-2.0	0.14-0.18	3.0-5.9	0.0-0.5	.20	.43			
	36-60	10-18	1.50-1.70	0.6-2.0	0.16-0.18	0.0-2.9	0.0-0.5	.15	.43			
36:												
Beverly	0-6	2-5	1.45-1.55	6.0-20.0	0.05-0.07	0.0-2.9	0.5-1.0	.15	.20	3	2	134
	6-17	2-5	1.50-1.60	6.0-20.0	0.05-0.08	0.0-2.9	0.0-0.5	.15	.28			
	17-60	0-3	1.50-1.65	20.0-100.0	0.01-0.04	0.0-2.9	0.0-0.5	.02	.20			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
37:												
Bisbee	0-5	3-8	1.25-1.45	2.0-6.0	0.09-0.12	0.0-2.9	1.0-2.0	.32	.32	5	2	134
	5-40	3-8	1.35-1.55	6.0-20.0	0.08-0.11	0.0-2.9	0.5-1.0	.32	.32			
	40-60	3-8	1.45-1.65	20.0-100.0	0.06-0.08	0.0-2.9	0.0-0.5	.17	.20			
38:												
Bisbee	0-5	3-8	1.25-1.45	2.0-6.0	0.09-0.12	0.0-2.9	1.0-2.0	.32	.32	5	2	134
	5-40	3-8	1.35-1.55	6.0-20.0	0.08-0.11	0.0-2.9	0.5-1.0	.32	.32			
	40-60	3-8	1.45-1.65	20.0-100.0	0.06-0.08	0.0-2.9	0.0-0.5	.17	.20			
39:												
Boesel	0-13	5-15	1.20-1.40	2.0-6.0	0.14-0.17	0.0-2.9	2.0-5.0	.28	.28	3	3	86
	13-20	5-18	1.30-1.50	2.0-6.0	0.10-0.16	0.0-2.9	1.0-2.0	.32	.37			
	20-29	2-8	1.55-1.70	6.0-20.0	0.04-0.07	0.0-2.9	0.5-1.0	.17	.28			
	29-60	0-5	1.45-1.60	20.0-100.0	0.02-0.06	0.0-2.9	0.0-0.5	.02	.24			
40:												
Bong	0-8	5-10	1.10-1.40	2.0-6.0	0.11-0.15	0.0-2.9	2.0-3.0	.32	.32	2	3	86
	8-17	5-10	1.35-1.55	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.24			
	17-60	0-7	1.40-1.60	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.10	.20			
41:												
Bong	0-8	5-10	1.10-1.40	2.0-6.0	0.11-0.15	0.0-2.9	2.0-3.0	.32	.32	2	3	86
	8-17	5-10	1.35-1.55	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.24			
	17-60	0-7	1.40-1.60	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.10	.20			
42:												
Bong	0-13	5-10	1.10-1.40	2.0-6.0	0.11-0.15	0.0-2.9	2.0-3.0	.32	.32	3	3	86
	13-21	5-10	1.35-1.55	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.24			
	21-60	0-7	1.40-1.60	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.10	.20			
43:												
Borgeau	0-9	8-15	1.45-1.55	0.6-2.0	0.14-0.18	0.0-2.9	2.0-5.0	.32	.32	5	5	56
	9-17	10-18	1.55-1.65	0.6-2.0	0.07-0.14	0.0-2.9	1.0-2.0	.20	.32			
	17-60	10-18	1.55-1.65	0.6-2.0	0.04-0.10	0.0-2.9	0.5-1.0	.10	.37			
44:												
Borgeau	0-9	8-15	1.45-1.55	0.6-2.0	0.14-0.18	0.0-2.9	2.0-5.0	.32	.32	5	5	56
	9-17	10-18	1.55-1.65	0.6-2.0	0.07-0.14	0.0-2.9	1.0-2.0	.20	.32			
	17-60	10-18	1.55-1.65	0.6-2.0	0.04-0.10	0.0-2.9	0.5-1.0	.10	.37			
45:												
Borgeau	0-9	8-15	1.45-1.55	0.6-2.0	0.14-0.18	0.0-2.9	2.0-5.0	.32	.32	5	5	56
	9-17	10-18	1.55-1.65	0.6-2.0	0.07-0.14	0.0-2.9	1.0-2.0	.20	.32			
	17-60	10-18	1.55-1.65	0.6-2.0	0.04-0.10	0.0-2.9	0.5-1.0	.10	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
46:												
Borosaprists	0-8	0-0	0.25-0.45	0.6-2.0	0.50-0.70	0.0-2.9	40-90	---	---	2	8	0
	8-18	0-0	0.30-0.50	0.6-2.0	0.50-0.70	0.0-2.9	20-40	---	---			
	18-55	2-10	1.00-1.50	0.6-20.0	0.09-0.18	0.0-2.9	10-30	.20	.28			
	55-60	0-0	0.40-0.60	0.6-2.0	0.50-0.70	0.0-2.9	20-40	---	---			
47:												
Bossburg	0-6	0-0	0.40-0.60	0.6-2.0	0.40-0.45	0.0-2.9	35-50	---	---	5	8	0
	6-13	18-25	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	20-30	.37	.37			
	13-29	18-25	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	10-20	.37	.37			
	29-60	10-20	0.65-0.95	0.6-2.0	0.15-0.21	0.0-2.9	1.0-10	.37	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
48:												
Broadax	0-11	10-18	1.25-1.45	0.6-2.0	0.17-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	11-38	20-35	1.50-1.60	0.6-2.0	0.17-0.20	3.0-5.9	1.0-2.0	.43	.43			
	38-60	15-25	1.35-1.60	0.6-2.0	0.17-0.19	0.0-2.9	0.5-1.0	.49	.49			
49:												
Broadax	0-11	10-18	1.25-1.45	0.6-2.0	0.17-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	11-38	20-35	1.50-1.60	0.6-2.0	0.17-0.20	3.0-5.9	1.0-2.0	.43	.43			
	38-60	15-25	1.35-1.60	0.6-2.0	0.17-0.19	0.0-2.9	0.5-1.0	.49	.49			
50:												
Brusher	0-9	5-15	0.80-0.90	0.6-2.0	0.21-0.23	0.0-2.9	1.0-2.0	.43	.43	4	2	134
	9-14	5-18	0.85-0.95	0.6-2.0	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
	14-24	12-16	1.35-1.55	0.6-2.0	0.10-0.16	0.0-2.9	0.5-1.0	.32	.37			
	24-50	18-35	1.35-1.55	0.6-2.0	0.09-0.15	3.0-5.9	0.0-0.5	.24	.32			
	50-60	2-8	1.50-1.60	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.24			
51:												
Brusher	0-5	5-15	0.80-0.90	0.6-2.0	0.21-0.23	0.0-2.9	1.0-2.0	.43	.43	4	2	134
	5-17	5-18	0.85-0.95	0.6-2.0	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
	17-51	12-16	1.35-1.55	0.6-2.0	0.10-0.16	0.0-2.9	0.5-1.0	.32	.37			
	51-56	18-35	1.35-1.55	0.6-2.0	0.09-0.15	3.0-5.9	0.0-0.5	.24	.32			
	56-60	2-8	1.50-1.60	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.24			
52:												
Brusher	0-9	5-15	0.80-0.90	0.6-2.0	0.21-0.23	0.0-2.9	1.0-2.0	.43	.43	4	2	134
	9-14	5-18	0.85-0.95	0.6-2.0	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
	14-24	12-16	1.35-1.55	0.6-2.0	0.10-0.16	0.0-2.9	0.5-1.0	.32	.37			
	24-50	18-35	1.35-1.55	0.6-2.0	0.09-0.15	3.0-5.9	0.0-0.5	.24	.32			
	50-60	2-8	1.50-1.60	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.24			
53:												
Brusher	0-9	5-15	0.80-0.90	0.6-2.0	0.21-0.23	0.0-2.9	1.0-2.0	.43	.43	4	2	134
	9-14	5-18	0.85-0.95	0.6-2.0	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
	14-24	12-16	1.35-1.55	0.6-2.0	0.10-0.16	0.0-2.9	0.5-1.0	.32	.37			
	24-50	18-35	1.35-1.55	0.6-2.0	0.09-0.15	3.0-5.9	0.0-0.5	.24	.32			
	50-60	2-8	1.50-1.60	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.24			
54:												
Buhrig	0-7	10-18	0.65-0.85	0.6-2.0	0.10-0.14	0.0-2.9	2.0-3.0	.15	.28	2	7	38
	7-18	5-18	0.65-0.85	2.0-6.0	0.03-0.07	0.0-2.9	1.0-2.0	.10	.28			
	18-32	5-10	1.30-1.60	2.0-6.0	0.02-0.04	0.0-2.9	0.0-0.5	.10	.28			
	32-36	---	---	---	---	---	---	---	---			
55:												
Buhrig	0-7	10-18	0.65-0.85	0.6-2.0	0.10-0.14	0.0-2.9	2.0-3.0	.15	.28	2	7	38
	7-18	5-18	0.65-0.85	2.0-6.0	0.03-0.07	0.0-2.9	1.0-2.0	.10	.28			
	18-32	5-10	1.30-1.60	2.0-6.0	0.02-0.04	0.0-2.9	0.0-0.5	.10	.28			
	32-36	---	---	---	---	---	---	---	---			
56:												
Buhrig	0-4	10-18	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.37	.37	2	5	56
	4-13	5-18	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	0.5-1.0	.37	.37			
	13-31	5-15	1.60-1.70	0.6-2.0	0.04-0.10	0.0-2.9	0.0-0.5	.10	.32			
	31-35	---	---	---	---	---	---	---	---			
57:												
Buhrig	0-7	10-18	0.65-0.85	0.6-2.0	0.10-0.14	0.0-2.9	2.0-3.0	.15	.28	2	7	38
	7-18	5-18	0.65-0.85	2.0-6.0	0.03-0.07	0.0-2.9	1.0-2.0	.10	.28			
	18-32	5-10	1.30-1.60	2.0-6.0	0.02-0.04	0.0-2.9	0.0-0.5	.10	.28			
	32-36	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
58:												
Buhrig	0-7	10-18	0.65-0.85	0.6-2.0	0.10-0.14	0.0-2.9	2.0-3.0	.15	.28	2	7	38
	7-18	5-18	0.65-0.85	2.0-6.0	0.03-0.07	0.0-2.9	1.0-2.0	.10	.28			
	18-32	5-10	1.30-1.60	2.0-6.0	0.02-0.04	0.0-2.9	0.0-0.5	.10	.28			
	32-36	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
59:												
Canteen	0-5	5-15	0.65-0.90	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	5-13	5-18	0.75-0.95	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.37	.43			
	13-34	6-15	0.90-1.40	0.6-6.0	0.09-0.15	0.0-2.9	0.5-1.0	.24	.37			
	34-45	2-10	1.40-1.60	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.15	.24			
	45-55	---	---	---	---	---	---	---	---			
60:												
Canteen	0-5	5-15	0.65-0.90	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	5-13	5-18	0.75-0.95	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.37	.43			
	13-34	6-15	0.90-1.40	0.6-6.0	0.09-0.15	0.0-2.9	0.5-1.0	.24	.37			
	34-45	2-10	1.40-1.60	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.15	.24			
	45-55	---	---	---	---	---	---	---	---			
61:												
Canteen	0-5	5-15	0.65-0.90	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	5-14	5-18	0.75-0.95	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.37	.43			
	14-27	6-15	0.90-1.40	0.6-6.0	0.09-0.15	0.0-2.9	0.5-1.0	.24	.37			
	27-50	2-10	1.40-1.60	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.15	.24			
	50-60	---	---	---	---	---	---	---	---			
62:												
Canteen	0-5	5-15	0.65-0.90	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	5-14	5-18	0.75-0.95	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.37	.43			
	14-27	6-15	0.90-1.40	0.6-6.0	0.09-0.15	0.0-2.9	0.5-1.0	.24	.37			
	27-50	2-10	1.40-1.60	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.15	.24			
	50-60	---	---	---	---	---	---	---	---			
63:												
Capoose	0-2	5-15	0.65-0.85	0.6-2.0	0.20-0.24	0.0-2.9	2.0-4.0	.37	.37	2	2	134
	2-17	5-18	0.70-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.32	.37			
	17-35	2-12	1.50-1.65	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	35-39	---	---	---	---	---	---	---	---			
64:												
Capoose	0-2	5-15	0.65-0.85	0.6-2.0	0.20-0.24	0.0-2.9	2.0-4.0	.37	.37	2	2	134
	2-17	5-18	0.70-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.32	.37			
	17-35	2-12	1.50-1.65	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	35-39	---	---	---	---	---	---	---	---			
65:												
Capoose	0-2	5-15	0.65-0.85	0.6-2.0	0.20-0.24	0.0-2.9	2.0-4.0	.37	.37	2	2	134
	2-17	5-18	0.70-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.32	.37			
	17-35	2-12	1.50-1.65	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	35-39	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
66:												
Capoose	0-2	5-15	0.65-0.85	0.6-2.0	0.20-0.24	0.0-2.9	2.0-4.0	.37	.37	2	2	134
	2-17	5-18	0.70-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.32	.37			
	17-35	2-12	1.50-1.65	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	35-39	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
67:												
Cashmere	0-10	5-10	1.30-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	10-36	5-10	1.35-1.50	2.0-6.0	0.10-0.15	0.0-2.9	1.0-2.0	.28	.32			
	36-46	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.5-1.0	.28	.32			
	46-60	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.0-0.5	.28	.32			
68:												
Cashmere	0-10	5-10	1.30-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	10-36	5-10	1.35-1.50	2.0-6.0	0.10-0.15	0.0-2.9	1.0-2.0	.28	.32			
	36-46	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.5-1.0	.28	.32			
	46-60	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.0-0.5	.28	.32			
69:												
Cashmere	0-10	5-10	1.30-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	10-36	5-10	1.35-1.50	2.0-6.0	0.10-0.15	0.0-2.9	1.0-2.0	.28	.32			
	36-46	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.5-1.0	.28	.32			
	46-60	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.0-0.5	.28	.32			
70:												
Cashmere	0-10	5-10	1.30-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	10-36	5-10	1.35-1.50	2.0-6.0	0.10-0.15	0.0-2.9	1.0-2.0	.28	.32			
	36-46	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.5-1.0	.28	.32			
	46-60	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.0-0.5	.28	.32			
71:												
Cashmont	0-19	6-12	1.20-1.40	2.0-6.0	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	3	4	86
	19-38	6-12	1.35-1.50	2.0-6.0	0.10-0.12	0.0-2.9	0.5-2.0	.15	.28			
	38-60	0-7	1.40-1.60	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.10	.28			
72:												
Cashmont	0-19	6-12	1.20-1.40	2.0-6.0	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	3	4	86
	19-38	6-12	1.35-1.50	2.0-6.0	0.10-0.12	0.0-2.9	0.5-2.0	.15	.28			
	38-60	0-7	1.40-1.60	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.10	.28			
73:												
Cedonia	0-2	16-18	1.10-1.20	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	2-24	18-35	1.40-1.50	0.6-2.0	0.19-0.21	0.0-2.9	0.5-1.0	.43	.43			
	24-60	18-35	1.40-1.50	0.2-0.6	0.17-0.20	0.0-2.9	0.0-0.5	.55	.55			
74:												
Cedonia	0-2	16-18	1.10-1.20	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	2-24	18-35	1.40-1.50	0.6-2.0	0.19-0.21	0.0-2.9	0.5-1.0	.43	.43			
	24-60	18-35	1.40-1.50	0.2-0.6	0.17-0.20	0.0-2.9	0.0-0.5	.55	.55			
75:												
Cedonia	0-2	16-18	1.10-1.20	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	2-24	18-35	1.40-1.50	0.6-2.0	0.19-0.21	0.0-2.9	0.5-1.0	.43	.43			
	24-60	18-35	1.40-1.50	0.2-0.6	0.17-0.20	0.0-2.9	0.0-0.5	.55	.55			
76:												
Cedonia	0-2	16-18	1.10-1.20	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	2-24	18-35	1.40-1.50	0.6-2.0	0.19-0.21	0.0-2.9	0.5-1.0	.43	.43			
	24-60	18-35	1.40-1.50	0.2-0.6	0.17-0.20	0.0-2.9	0.0-0.5	.55	.55			
77:												
Centralpeak	0-6	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	6-16	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	16-21	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	21-25	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	25-35	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
77:												
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			
78:												
Centralpeak	0-6	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	6-16	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	16-21	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	21-25	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	25-35	---	---	---	---	---	---	---	---			
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			
79:												
Centralpeak	0-6	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	6-16	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	16-21	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	21-25	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	25-35	---	---	---	---	---	---	---	---			
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			
80:												
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			
81:												
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			
82:												
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			
83:												
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
83:												
Brusher	0-5	5-15	0.80-0.90	0.6-2.0	0.21-0.23	0.0-2.9	1.0-2.0	.43	.43	4	2	134
	5-17	5-18	0.85-0.95	0.6-2.0	0.17-0.22	0.0-2.9	0.5-1.0	.43	.43			
	17-56	12-16	1.35-1.55	0.6-2.0	0.10-0.16	0.0-2.9	0.5-1.0	.32	.37			
	56-60	2-8	1.50-1.60	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.24			
84:												
Centralpeak	0-6	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	6-16	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	16-21	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	21-25	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	25-35	---	---	---	---	---	---	---	---			
Centralpeak	0-4	10-18	0.65-0.90	0.6-2.0	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	4-12	5-18	0.70-0.95	0.6-2.0	0.14-0.20	0.0-2.9	0.5-1.0	.37	.43			
	12-20	5-15	0.85-1.35	0.6-6.0	0.09-0.15	0.0-2.9	0.0-0.5	.24	.37			
	20-29	3-12	1.35-1.55	2.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.17	.28			
	29-39	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
85:												
Chumstick	0-7	3-8	1.10-1.35	0.6-2.0	0.09-0.12	0.0-2.9	2.0-3.0	.17	.32	1	7	38
	7-12	3-8	1.20-1.40	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32			
	12-16	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
86:												
Chumstick	0-7	3-8	1.10-1.35	0.6-2.0	0.09-0.12	0.0-2.9	2.0-3.0	.17	.32	1	7	38
	7-12	3-8	1.20-1.40	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32			
	12-16	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
87:												
Codylake	0-5	10-18	0.65-0.85	0.6-2.0	0.16-0.19	0.0-2.9	2.0-4.0	.37	.37	4	2	134
	5-24	5-18	0.65-0.85	2.0-6.0	0.15-0.18	0.0-2.9	1.0-2.0	.32	.37			
	24-43	3-8	1.45-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.20	.37			
	43-53	---	---	---	---	---	---	---	---			
88:												
Codylake	0-5	10-18	0.65-0.85	0.6-2.0	0.16-0.19	0.0-2.9	2.0-4.0	.37	.37	4	2	134
	5-24	5-18	0.65-0.85	2.0-6.0	0.15-0.18	0.0-2.9	1.0-2.0	.32	.37			
	24-43	3-8	1.45-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.20	.37			
	43-53	---	---	---	---	---	---	---	---			
89:												
Codylake	0-5	10-18	0.65-0.85	0.6-2.0	0.16-0.19	0.0-2.9	2.0-4.0	.37	.37	4	2	134
	5-24	5-18	0.65-0.85	2.0-6.0	0.15-0.18	0.0-2.9	1.0-2.0	.32	.37			
	24-43	3-8	1.45-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.20	.37			
	43-53	---	---	---	---	---	---	---	---			
90:												
Colockum	0-10	10-18	1.20-1.35	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	10-38	22-35	1.20-1.40	0.6-2.0	0.14-0.17	0.0-2.9	1.0-2.0	.28	.32			
	38-60	22-35	1.25-1.45	0.6-2.0	0.14-0.18	3.0-5.9	0.5-1.0	.28	.43			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
91:												
Colockum	0-11	10-18	1.10-1.30	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0	.24	.32	5	6	48
	11-22	22-35	1.20-1.40	0.6-2.0	0.16-0.19	0.0-2.9	1.0-2.0	.37	.43			
	22-36	22-35	1.20-1.40	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0	.20	.32			
	36-46	22-35	1.25-1.45	0.6-2.0	0.14-0.19	3.0-5.9	0.0-0.5	.28	.43			
	46-60	22-35	1.25-1.50	0.6-2.0	0.11-0.16	3.0-5.9	0.0-0.5	.15	.37			
92:												
Colockum	0-10	10-18	1.10-1.30	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0	.24	.32	5	6	48
	10-33	22-35	1.20-1.40	0.6-2.0	0.14-0.17	0.0-2.9	0.5-1.0	.20	.32			
	33-60	22-35	1.25-1.50	0.6-2.0	0.11-0.16	3.0-5.9	0.0-0.5	.15	.37			
93:												
Conconully	0-15	3-10	1.35-1.45	2.0-6.0	0.12-0.15	0.0-2.9	1.0-2.0	.32	.37	3	3	86
	15-35	3-10	1.40-1.70	0.6-2.0	0.07-0.13	0.0-2.9	0.0-1.0	.24	.37			
	35-60	3-10	1.70-2.00	0.06-0.2	0.08-0.12	0.0-2.9	0.0-0.5	.15	.37			
94:												
Conconully	0-15	3-10	1.35-1.45	2.0-6.0	0.12-0.15	0.0-2.9	1.0-2.0	.32	.37	3	3	86
	15-35	3-10	1.40-1.70	0.6-2.0	0.07-0.13	0.0-2.9	0.0-1.0	.24	.37			
	35-60	3-10	1.70-2.00	0.06-0.2	0.08-0.12	0.0-2.9	0.0-0.5	.15	.37			
95:												
Conconully	0-9	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	9-32	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	32-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
96:												
Conconully	0-9	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	9-32	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	32-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
97:												
Conconully	0-12	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	12-21	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	21-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
98:												
Conconully	0-10	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	10-25	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	25-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
99:												
Conconully	0-9	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	9-32	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	32-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
Bakeoven	0-3	15-25	1.25-1.35	0.6-2.0	0.12-0.16	0.0-2.9	1.0-3.0	.10	.37	1	8	0
	3-7	15-25	1.35-1.45	0.6-2.0	0.08-0.15	0.0-2.9	1.0-2.0	.10	.32			
	7-11	---	---	---	---	---	---	---	---			
100:												
Conconully	0-7	8-12	1.20-1.40	2.0-6.0	0.11-0.14	0.0-2.9	1.0-2.0	.20	.37	3	5	56
	7-21	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	21-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
101:												
Conconully	0-7	8-12	1.20-1.40	2.0-6.0	0.11-0.14	0.0-2.9	1.0-2.0	.20	.37	3	5	56
	7-21	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	21-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
102:												
Conconully	0-10	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	10-25	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	25-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
Swakane	0-7	7-15	1.35-1.45	0.6-2.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.32	1	7	38
	7-11	5-15	1.45-1.55	0.6-2.0	0.05-0.10	0.0-2.9	1.0-2.0	.10	.32			
	11-14	5-15	1.45-1.55	2.0-6.0	0.04-0.09	0.0-2.9	0.5-1.0	.10	.32			
	14-18	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
103:												
Couleedam	0-3	5-15	1.40-1.55	2.0-6.0	0.06-0.09	0.0-2.9	1.0-2.0	.17	.32	1	5	56
	3-8	5-15	1.40-1.55	2.0-6.0	0.05-0.08	0.0-2.9	1.0-2.0	.17	.32			
	8-15	5-15	1.45-1.60	2.0-6.0	0.04-0.08	0.0-2.9	0.0-1.0	.15	.32			
	15-19	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
104:												
Coxlake	0-6	10-18	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.37	5	5	56
	6-29	5-15	1.30-1.50	0.6-2.0	0.15-0.20	0.0-2.9	1.0-2.0	.37	.37			
	29-48	5-15	1.30-1.50	0.6-2.0	0.10-0.18	0.0-2.9	0.5-1.0	.32	.37			
	48-60	2-10	1.40-1.60	2.0-6.0	0.04-0.12	0.0-2.9	0.0-0.5	.24	.37			
105:												
Cryofluvents	0-5	5-15	0.95-1.40	0.6-2.0	0.14-0.21	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	5-12	5-15	0.95-1.40	0.6-2.0	0.12-0.18	0.0-2.9	1.0-2.0	.32	.37			
	12-60	0-10	1.50-1.60	2.0-20.0	0.02-0.13	0.0-2.9	0.0-1.0	.05	.24			
106:												
Cubcreek	0-10	8-15	1.30-1.40	2.0-6.0	0.12-0.15	0.0-2.9	2.0-5.0	.28	.28	5	3	86
	10-19	5-15	1.40-1.50	0.6-6.0	0.08-0.18	0.0-2.9	1.0-2.0	.32	.37			
	19-60	5-15	1.45-1.55	2.0-20.0	0.05-0.13	0.0-2.9	0.5-1.0	.17	.20			
107:												
Cumulic Haploxerolls	0-30	10-18	1.40-1.55	0.6-2.0	0.10-0.13	0.0-2.9	2.0-4.0	.24	.32	5	6	48
	30-48	5-18	1.45-1.60	0.6-2.0	0.06-0.16	0.0-2.9	1.0-2.0	.20	.32			
	48-60	2-15	1.50-1.70	2.0-20.0	0.04-0.14	0.0-2.9	0.0-1.0	.15	.32			
108:												
Dart	0-3	3-8	1.45-1.55	6.0-20.0	0.06-0.08	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	3-32	2-5	1.45-1.55	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.17			
	32-60	1-2	1.50-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.10			
109:												
Dart	0-8	3-8	1.45-1.55	6.0-20.0	0.06-0.08	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	8-16	2-5	1.45-1.55	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.17			
	16-60	1-2	1.50-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
110:												
Dart	0-3	3-8	1.45-1.55	6.0-20.0	0.06-0.08	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	3-32	2-5	1.45-1.55	6.0-20.0	0.05-0.09	0.0-2.9	0.0-0.5	.15	.17			
	32-60	1-2	1.50-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.10			
Springdale	0-4	4-8	1.25-1.45	2.0-6.0	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	2	4	86
	4-11	4-8	1.20-1.40	2.0-6.0	0.09-0.11	0.0-2.9	0.5-1.0	.15	.32			
	11-17	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
	17-60	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
111:												
Dart	0-5	3-8	1.45-1.55	6.0-20.0	0.06-0.08	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	5-60	1-2	1.50-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.10			
Springdale	0-4	4-8	1.25-1.45	2.0-6.0	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	2	4	86
	4-11	4-8	1.20-1.40	2.0-6.0	0.09-0.11	0.0-2.9	0.5-1.0	.15	.32			
	11-17	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
	17-60	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
112:												
Dehart	0-7	8-12	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.24	.28	5	6	48
	7-32	8-15	1.55-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.15	.28			
	32-60	8-15	1.55-1.65	2.0-6.0	0.03-0.08	0.0-2.9	0.0-0.5	.05	.28			
113:												
Dehart	0-7	8-12	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.24	.28	5	6	48
	7-32	8-15	1.55-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.15	.28			
	32-60	8-15	1.55-1.65	2.0-6.0	0.03-0.08	0.0-2.9	0.0-0.5	.05	.28			
114:												
Dehart	0-7	8-12	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.24	.28	5	6	48
	7-32	8-15	1.55-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.15	.28			
	32-60	8-15	1.55-1.65	2.0-6.0	0.03-0.08	0.0-2.9	0.0-0.5	.05	.28			
Phoebe	0-16	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	3	3	86
	16-30	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	30-39	10-15	1.45-1.65	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
	39-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
115:												
Dehart	0-8	8-12	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.24	.28	5	6	48
	8-30	8-15	1.55-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.15	.28			
	30-60	8-15	1.55-1.65	2.0-6.0	0.03-0.08	0.0-2.9	0.0-0.5	.05	.28			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
116:												
Dehart	0-8	8-12	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.24	.28	5	6	48
	8-30	8-15	1.55-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.15	.28			
	30-60	8-15	1.55-1.65	2.0-6.0	0.03-0.08	0.0-2.9	0.0-0.5	.05	.28			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
117:												
Dinkelman	0-13	8-15	1.20-1.40	0.6-2.0	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	4	5	56
	13-39	8-12	1.35-1.45	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.20	.32			
	39-43	2-7	1.35-1.50	2.0-6.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32			
	43-53	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
118:												
Dinkelman	0-13	8-15	1.20-1.40	0.6-2.0	0.16-0.18	0.0-2.9	1.0-2.0	.32	.32	4	5	56
	13-39	8-12	1.35-1.45	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.20	.32			
	39-43	2-7	1.35-1.50	2.0-6.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32			
	43-53	---	---	---	---	---	---	---	---			
119:												
Dinkelman	0-10	8-12	1.20-1.40	0.6-2.0	0.13-0.18	0.0-2.9	1.0-3.0	.20	.32	4	6	48
	10-17	8-12	1.35-1.45	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.20	.32			
	17-43	2-7	1.35-1.50	2.0-6.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32			
	43-53	---	---	---	---	---	---	---	---			
120:												
Disautel	0-15	5-15	1.35-1.45	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0	.43	.43	3	3	86
	15-32	5-15	1.40-1.50	0.6-2.0	0.14-0.18	0.0-2.9	0.5-1.0	.43	.43			
	32-60	5-15	1.70-2.00	0.06-0.2	0.06-0.12	0.0-2.9	0.0-0.5	.15	.43			
121:												
Disautel	0-15	5-15	1.35-1.45	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0	.43	.43	3	3	86
	15-32	5-15	1.40-1.50	0.6-2.0	0.14-0.18	0.0-2.9	0.5-1.0	.43	.43			
	32-60	5-15	1.70-2.00	0.06-0.2	0.06-0.12	0.0-2.9	0.0-0.5	.15	.43			
122:												
Disautel	0-15	5-15	1.35-1.45	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0	.43	.43	3	3	86
	15-32	5-15	1.40-1.50	0.6-2.0	0.14-0.18	0.0-2.9	0.5-1.0	.43	.43			
	32-60	5-15	1.70-2.00	0.06-0.2	0.06-0.12	0.0-2.9	0.0-0.5	.15	.43			
Nespelem	0-12	10-15	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	12-22	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	0.0-1.0	.43	.43			
	22-24	---	1.45-1.60	---	---	---	---	---	---			
	24-60	10-30	1.20-1.40	0.6-2.0	0.00-0.00	0.0-2.9	0.0-0.5	.43	.43			
123:												
Disautel	0-15	5-15	1.35-1.45	0.6-2.0	0.14-0.17	0.0-2.9	1.0-3.0	.43	.43	3	3	86
	15-32	5-15	1.40-1.50	0.6-2.0	0.14-0.18	0.0-2.9	0.5-1.0	.43	.43			
	32-60	5-15	1.70-2.00	0.06-0.2	0.06-0.12	0.0-2.9	0.0-0.5	.15	.43			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
124:												
Donavan	0-9	5-12	1.15-1.30	2.0-6.0	0.10-0.13	0.0-2.9	1.0-3.0	.32	.32	3	3	86
	9-15	5-12	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.32	.32			
	15-33	5-15	1.30-1.50	2.0-6.0	0.08-0.12	0.0-2.9	0.5-1.0	.20	.37			
	33-60	3-15	1.70-2.00	0.06-0.2	0.07-0.11	0.0-2.9	0.0-0.5	.17	.37			
125:												
Donavan	0-9	5-12	1.15-1.30	2.0-6.0	0.10-0.13	0.0-2.9	1.0-3.0	.32	.32	3	3	86
	9-15	5-12	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.32	.32			
	15-33	5-15	1.30-1.50	2.0-6.0	0.08-0.12	0.0-2.9	0.5-1.0	.20	.37			
	33-60	3-15	1.70-2.00	0.06-0.2	0.07-0.11	0.0-2.9	0.0-0.5	.17	.37			
126:												
Donavan	0-8	5-12	1.15-1.30	2.0-6.0	0.10-0.13	0.0-2.9	1.0-3.0	.32	.32	3	4	86
	8-15	5-12	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.32	.37			
	15-36	5-15	1.30-1.50	2.0-6.0	0.08-0.12	0.0-2.9	0.5-1.0	.20	.37			
	36-60	5-15	1.70-2.00	0.06-0.2	0.07-0.11	0.0-2.9	0.0-0.5	.17	.37			
127:												
Donavan	0-8	5-12	1.15-1.30	2.0-6.0	0.10-0.13	0.0-2.9	1.0-3.0	.32	.32	3	4	86
	8-15	5-12	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.32	.37			
	15-36	5-15	1.30-1.50	2.0-6.0	0.08-0.12	0.0-2.9	0.5-1.0	.20	.37			
	36-60	5-15	1.70-2.00	0.06-0.2	0.07-0.11	0.0-2.9	0.0-0.5	.17	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
128:												
Donavan	0-11	5-12	1.10-1.20	2.0-6.0	0.14-0.18	0.0-2.9	1.0-4.0	.32	.32	3	5	56
	11-21	5-15	1.30-1.50	2.0-6.0	0.08-0.16	0.0-2.9	0.5-1.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.37			
129:												
Donavan	0-11	5-12	1.10-1.20	2.0-6.0	0.14-0.18	0.0-2.9	1.0-4.0	.32	.32	3	5	56
	11-21	5-15	1.30-1.50	2.0-6.0	0.08-0.16	0.0-2.9	0.5-1.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.37			
130:												
Donavan	0-11	5-12	1.10-1.20	2.0-6.0	0.14-0.18	0.0-2.9	1.0-4.0	.32	.32	3	5	56
	11-21	5-15	1.30-1.50	2.0-6.0	0.08-0.16	0.0-2.9	0.5-1.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.37			
131:												
Donavan	0-5	5-12	1.15-1.35	2.0-6.0	0.14-0.18	0.0-2.9	1.0-2.0	.24	.32	3	6	48
	5-21	5-12	1.30-1.50	2.0-6.0	0.07-0.17	0.0-2.9	1.0-2.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.10	0.0-2.9	0.0-0.5	.10	.37			
132:												
Donavan	0-5	5-12	1.15-1.35	2.0-6.0	0.14-0.18	0.0-2.9	1.0-2.0	.24	.32	3	6	48
	5-21	5-12	1.30-1.50	2.0-6.0	0.07-0.17	0.0-2.9	1.0-2.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.10	0.0-2.9	0.0-0.5	.10	.37			
133:												
Donavan	0-11	5-12	1.10-1.20	2.0-6.0	0.14-0.18	0.0-2.9	1.0-4.0	.32	.32	3	5	56
	11-21	5-15	1.30-1.50	2.0-6.0	0.08-0.16	0.0-2.9	0.5-1.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.37			
Goldlake	0-22	10-18	1.15-1.25	0.6-2.0	0.20-0.22	0.0-2.9	2.0-4.0	.43	.43	4	5	56
	22-29	10-18	1.25-1.35	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.28	.43			
	29-40	8-15	1.30-1.40	0.6-2.0	0.10-0.14	0.0-2.9	1.0-2.0	.17	.37			
	40-60	8-15	1.70-2.00	0.06-0.2	0.08-0.12	0.0-2.9	0.5-1.0	.10	.28			
134:												
Donavan	0-11	5-12	1.10-1.20	2.0-6.0	0.14-0.18	0.0-2.9	1.0-4.0	.32	.32	3	5	56
	11-21	5-15	1.30-1.50	2.0-6.0	0.08-0.16	0.0-2.9	0.5-1.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.15	0.0-2.9	0.0-0.5	.17	.37			
Northstar	0-2	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	2-18	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	18-27	8-15	1.50-1.60	2.0-6.0	0.03-0.07	0.0-2.9	0.0-1.0	.10	.37			
	27-31	---	---	---	---	---	---	---	---			
135:												
Donavan	0-8	5-12	1.15-1.30	2.0-6.0	0.10-0.13	0.0-2.9	1.0-3.0	.32	.32	3	4	86
	8-15	5-12	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.32	.37			
	15-36	5-15	1.30-1.50	2.0-6.0	0.08-0.12	0.0-2.9	0.5-1.0	.20	.37			
	36-60	5-15	1.70-2.00	0.06-0.2	0.07-0.11	0.0-2.9	0.0-0.5	.17	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
136:												
Donavan	0-5	5-12	1.15-1.35	2.0-6.0	0.14-0.18	0.0-2.9	1.0-2.0	.24	.32	3	6	48
	5-21	5-12	1.30-1.50	2.0-6.0	0.07-0.17	0.0-2.9	1.0-2.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.10	0.0-2.9	0.0-0.5	.10	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
137:												
Donavan	0-10	5-12	1.15-1.35	2.0-6.0	0.14-0.18	0.0-2.9	1.0-2.0	.24	.32	3	6	48
	10-21	5-12	1.30-1.50	2.0-6.0	0.07-0.17	0.0-2.9	1.0-2.0	.20	.32			
	21-60	5-15	1.70-2.00	0.06-0.2	0.07-0.10	0.0-2.9	0.0-0.5	.10	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
138:												
Donavan	0-8	5-12	1.15-1.30	2.0-6.0	0.10-0.13	0.0-2.9	1.0-3.0	.32	.32	3	4	86
	8-15	5-12	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.32	.37			
	15-36	5-15	1.30-1.50	2.0-6.0	0.08-0.12	0.0-2.9	0.5-1.0	.20	.37			
	36-60	5-15	1.70-2.00	0.06-0.2	0.07-0.11	0.0-2.9	0.0-0.5	.17	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
139:												
Duleylake	0-17	12-15	1.30-1.40	0.6-2.0	0.16-0.18	0.0-2.9	1.0-2.0	.28	.28	5	5	56
	17-31	10-15	1.35-1.45	0.6-2.0	0.12-0.17	0.0-2.9	1.0-2.0	.24	.24			
	31-37	25-30	1.35-1.45	0.6-2.0	0.17-0.20	3.0-5.9	0.5-1.0	.32	.32			
	37-60	10-15	1.45-1.55	0.6-2.0	0.12-0.19	0.0-2.9	0.0-0.5	.24	.24			
140:												
Elbowlake	0-2	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	2-15	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.37	.37			
	15-20	12-18	1.50-1.65	0.6-2.0	0.05-0.12	0.0-2.9	0.5-1.0	.10	.32			
	20-60	12-18	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
141:												
Elbowlake	0-2	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	2-15	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.37	.37			
	15-20	12-18	1.50-1.65	0.6-2.0	0.05-0.12	0.0-2.9	0.5-1.0	.10	.32			
	20-60	12-18	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
142:												
Elbowlake	0-2	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	2-15	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.37	.37			
	15-20	12-18	1.50-1.65	0.6-2.0	0.05-0.12	0.0-2.9	0.5-1.0	.10	.32			
	20-60	12-18	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
143:												
Elbowlake	0-5	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	5-20	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.37	.37			
	20-60	12-18	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
144:												
Elbowlake	0-5	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	5-20	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.37	.37			
	20-60	12-18	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
145:												
Elbowlake	0-5	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	5-20	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-2.0	.37	.37			
	20-60	12-18	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
146:												
Ellisforde	0-12	10-18	1.10-1.30	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	12-30	10-18	1.30-1.45	0.6-2.0	0.16-0.20	0.0-2.9	0.5-1.0	.49	.49			
	30-60	10-18	1.50-1.75	0.2-0.6	0.18-0.23	0.0-2.9	0.0-0.5	.43	.43			
147:												
Ellisforde	0-12	10-18	1.10-1.30	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	12-30	10-18	1.30-1.45	0.6-2.0	0.16-0.20	0.0-2.9	0.5-1.0	.49	.49			
	30-60	10-18	1.50-1.75	0.2-0.6	0.18-0.23	0.0-2.9	0.0-0.5	.43	.43			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
148:												
Ellisforde	0-12	10-18	1.10-1.30	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	12-30	10-18	1.30-1.45	0.6-2.0	0.16-0.20	0.0-2.9	0.5-1.0	.49	.49			
	30-60	10-18	1.50-1.75	0.2-0.6	0.18-0.23	0.0-2.9	0.0-0.5	.43	.43			
149:												
Elvedere	0-6	15-20	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	6-10	35-45	1.25-1.45	0.2-0.6	0.15-0.17	3.0-5.9	1.0-2.0	.43	.43			
	10-60	30-45	1.25-1.45	0.06-0.2	0.15-0.17	3.0-5.9	0.5-1.0	.43	.43			
150:												
Elvedere	0-6	18-27	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.49	.49	5	6	48
	6-10	35-45	1.25-1.45	0.2-0.6	0.15-0.17	3.0-5.9	1.0-2.0	.43	.43			
	10-60	30-45	1.25-1.45	0.06-0.2	0.15-0.17	3.0-5.9	0.5-1.0	.43	.43			
151:												
Elvedere	0-6	18-27	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.49	.49	5	6	48
	6-10	35-45	1.25-1.45	0.2-0.6	0.15-0.17	3.0-5.9	1.0-2.0	.43	.43			
	10-60	30-45	1.25-1.45	0.06-0.2	0.15-0.17	3.0-5.9	0.5-1.0	.43	.43			
152:												
Elvedere	0-6	15-20	1.20-1.40	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	6-10	35-45	1.25-1.45	0.2-0.6	0.15-0.17	3.0-5.9	1.0-2.0	.43	.43			
	10-60	30-45	1.25-1.45	0.06-0.2	0.15-0.17	3.0-5.9	0.5-1.0	.43	.43			
Leahy	0-3	15-20	1.15-1.35	0.6-2.0	0.15-0.17	0.0-2.9	0.5-1.0	.49	.49	5	4L	86
	3-10	35-55	1.25-1.45	0.2-0.6	0.11-0.15	3.0-5.9	0.0-0.5	.43	.43			
	10-60	30-45	1.35-1.50	0.01-0.06	0.07-0.13	3.0-5.9	0.0-0.5	.43	.43			
153:												
Emdent	0-18	5-15	0.75-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-4.0	.43	.43	5	2	134
	18-60	5-15	0.75-0.95	0.6-2.0	0.16-0.20	0.0-2.9	0.0-0.5	.49	.49			
154:												
Emdent	0-26	8-15	0.75-0.85	0.6-2.0	0.15-0.17	0.0-2.9	2.0-4.0	.43	.43	5	2	134
	26-36	8-15	0.75-0.85	0.6-2.0	0.17-0.20	0.0-2.9	1.0-2.0	.43	.43			
	36-60	12-20	0.75-0.95	0.6-2.0	0.17-0.20	0.0-2.9	0.5-1.0	.43	.43			
155:												
Ewall	0-7	2-5	1.45-1.55	20.0-100.0	0.05-0.07	0.0-2.9	0.5-1.0	.10	.10	5	1	160
	7-60	0-5	1.50-1.60	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.10	.10			
156:												
Ewall	0-7	2-5	1.45-1.55	20.0-100.0	0.05-0.07	0.0-2.9	0.5-1.0	.10	.10	5	1	160
	7-60	0-5	1.50-1.60	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.10	.10			
157:												
Ewall	0-13	5-10	1.25-1.45	6.0-20.0	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	5	2	134
	13-38	0-5	1.45-1.60	20.0-100.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.10			
	38-60	0-5	1.45-1.60	20.0-100.0	0.04-0.07	0.0-2.9	0.0-0.5	.10	.24			
158:												
Ewall	0-13	5-10	1.25-1.45	6.0-20.0	0.08-0.11	0.0-2.9	0.5-1.0	.28	.28	5	2	134
	13-38	0-5	1.45-1.60	20.0-100.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.10			
	38-60	0-5	1.45-1.60	20.0-100.0	0.04-0.07	0.0-2.9	0.0-0.5	.10	.24			
159:												
Ewall	0-7	0-5	1.35-1.45	6.0-20.0	0.05-0.08	0.0-2.9	3.0-9.0	.10	.17	5	2	134
	7-60	0-5	1.40-1.60	6.0-20.0	0.05-0.07	0.0-2.9	3.0-9.0	.10	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
160:												
Farrell	0-10	5-12	1.30-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	10-22	5-12	1.35-1.45	2.0-6.0	0.11-0.15	0.0-2.9	1.0-2.0	.37	.37			
	22-28	5-12	1.45-1.55	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.32	.32			
	28-60	5-12	1.45-1.55	2.0-6.0	0.10-0.13	0.0-2.9	0.0-0.5	.28	.32			
161:												
Farrell	0-10	5-12	1.30-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	10-22	5-12	1.35-1.45	2.0-6.0	0.11-0.15	0.0-2.9	1.0-2.0	.37	.37			
	22-28	5-12	1.45-1.55	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.32	.32			
	28-60	5-12	1.45-1.55	2.0-6.0	0.10-0.13	0.0-2.9	0.0-0.5	.28	.32			
162:												
Farrell	0-10	5-12	1.30-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	10-22	5-12	1.35-1.45	2.0-6.0	0.11-0.15	0.0-2.9	1.0-2.0	.37	.37			
	22-28	5-12	1.45-1.55	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.32	.32			
	28-60	5-12	1.45-1.55	2.0-6.0	0.10-0.13	0.0-2.9	0.0-0.5	.28	.32			
163:												
Farrell	0-8	5-10	1.30-1.40	2.0-6.0	0.12-0.14	0.0-2.9	1.0-2.0	.32	.37	5	4	86
	8-22	5-10	1.35-1.45	2.0-6.0	0.11-0.14	0.0-2.9	1.0-2.0	.32	.32			
	22-40	5-10	1.45-1.55	2.0-6.0	0.10-0.14	0.0-2.9	0.0-1.0	.32	.37			
	40-60	5-10	1.45-1.55	2.0-6.0	0.10-0.13	0.0-2.9	0.0-0.5	.32	.37			
164:												
Fivelakes	0-10	5-15	1.35-1.50	2.0-6.0	0.05-0.10	0.0-2.9	1.0-3.0	.10	.28	3	8	0
	10-28	5-15	1.50-1.60	2.0-6.0	0.05-0.11	0.0-2.9	0.5-1.0	.10	.32			
	28-60	0-2	1.50-1.70	20.0-100.0	0.01-0.04	0.0-2.9	0.0-0.5	.02	.17			
165:												
Fivelakes	0-10	10-15	1.20-1.40	2.0-6.0	0.10-0.13	0.0-2.9	1.0-3.0	.28	.32	3	3	86
	10-14	5-15	1.40-1.60	2.0-6.0	0.09-0.12	0.0-2.9	1.0-2.0	.15	.32			
	14-30	5-12	1.50-1.60	2.0-6.0	0.07-0.10	0.0-2.9	0.5-1.0	.10	.32			
	30-60	0-5	1.50-1.70	20.0-100.0	0.02-0.03	0.0-2.9	0.0-0.5	.05	.24			
166:												
Fivelakes	0-4	10-15	1.35-1.50	0.6-2.0	0.11-0.16	0.0-2.9	1.0-3.0	.17	.24	3	6	48
	4-12	5-15	1.35-1.50	2.0-6.0	0.08-0.15	0.0-2.9	1.0-3.0	.15	.28			
	12-20	5-15	1.50-1.60	2.0-6.0	0.04-0.13	0.0-2.9	1.0-2.0	.10	.32			
	20-32	5-10	1.50-1.60	2.0-6.0	0.03-0.08	0.0-2.9	0.5-1.0	.05	.20			
	32-60	0-2	1.50-1.70	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.02	.10			
167:												
Fivelakes	0-4	10-15	1.35-1.50	0.6-2.0	0.11-0.16	0.0-2.9	1.0-3.0	.17	.24	3	6	48
	4-12	5-15	1.35-1.50	2.0-6.0	0.08-0.15	0.0-2.9	1.0-3.0	.15	.28			
	12-20	5-15	1.50-1.60	2.0-6.0	0.04-0.13	0.0-2.9	1.0-2.0	.10	.32			
	20-32	5-10	1.50-1.60	2.0-6.0	0.03-0.08	0.0-2.9	0.5-1.0	.05	.20			
	32-60	0-2	1.50-1.70	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.02	.10			
168:												
Fivelakes	0-4	10-15	1.35-1.50	0.6-2.0	0.06-0.13	0.0-2.9	1.0-3.0	.10	.32	3	8	0
	4-12	5-15	1.50-1.60	2.0-6.0	0.05-0.11	0.0-2.9	1.0-2.0	.10	.32			
	12-30	5-15	1.50-1.60	2.0-6.0	0.05-0.11	0.0-2.9	0.5-1.0	.10	.32			
	30-60	0-2	1.50-1.70	20.0-100.0	0.01-0.04	0.0-2.9	0.0-0.5	.02	.17			
169:												
Friedlander	0-3	5-15	0.85-1.00	0.6-2.0	0.21-0.24	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	3-8	5-15	0.85-1.00	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.43	.49			
	8-23	18-27	1.35-1.55	0.6-2.0	0.13-0.17	3.0-5.9	0.0-1.0	.37	.43			
	23-60	35-45	1.50-1.65	0.06-0.6	0.12-0.17	6.0-8.9	0.0-0.5	.28	.32			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
170:												
Friedlander	0-3	5-15	0.85-1.00	0.6-2.0	0.21-0.24	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	3-8	5-15	0.85-1.00	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.43	.49			
	8-23	18-27	1.35-1.55	0.6-2.0	0.13-0.17	3.0-5.9	0.0-1.0	.37	.43			
	23-60	35-45	1.50-1.65	0.06-0.6	0.12-0.17	6.0-8.9	0.0-0.5	.28	.32			
171:												
Friedlander	0-3	5-15	0.85-1.00	0.6-2.0	0.21-0.24	0.0-2.9	1.0-2.0	.49	.49	5	5	56
	3-8	5-15	0.85-1.00	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.43	.49			
	8-23	18-27	1.35-1.55	0.6-2.0	0.13-0.17	3.0-5.9	0.0-1.0	.37	.43			
	23-60	35-45	1.50-1.65	0.06-0.6	0.12-0.17	6.0-8.9	0.0-0.5	.28	.32			
172:												
Garrison	0-12	12-20	1.15-1.35	0.6-2.0	0.16-0.18	0.0-2.9	2.0-5.0	.32	.32	3	5	56
	12-28	10-15	1.25-1.45	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.15	.32			
	28-60	0-5	1.55-1.75	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.05	.20			
173:												
Garrison	0-12	12-20	1.15-1.35	0.6-2.0	0.16-0.18	0.0-2.9	2.0-5.0	.32	.32	3	5	56
	12-28	10-15	1.25-1.45	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.15	.32			
	28-60	0-5	1.55-1.75	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.05	.20			
174:												
Garrison	0-14	12-20	1.15-1.35	0.6-2.0	0.12-0.15	0.0-2.9	2.0-5.0	.17	.32	3	6	48
	14-24	10-15	1.25-1.45	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.15	.32			
	24-60	0-5	1.55-1.75	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.05	.20			
175:												
Georgecreek	0-11	10-18	1.35-1.55	0.6-2.0	0.20-0.23	0.0-2.9	2.0-3.0	.37	.37	4	5	56
	11-19	13-23	1.40-1.60	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.43	.43			
	19-53	20-35	1.45-1.65	0.6-2.0	0.12-0.15	3.0-5.9	0.5-1.0	.32	.37			
	53-58	10-20	1.50-1.60	0.6-2.0	0.11-0.14	0.0-2.9	0.0-0.5	.32	.37			
	58-68	---	---	---	---	---	---	---	---			
176:												
Georgecreek	0-11	10-18	1.35-1.55	0.6-2.0	0.20-0.23	0.0-2.9	2.0-3.0	.37	.37	4	5	56
	11-19	13-23	1.40-1.60	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.43	.43			
	19-53	20-35	1.45-1.65	0.6-2.0	0.12-0.15	3.0-5.9	0.5-1.0	.32	.37			
	53-58	10-20	1.50-1.60	0.6-2.0	0.11-0.14	0.0-2.9	0.0-0.5	.32	.37			
	58-68	---	---	---	---	---	---	---	---			
177:												
Georgecreek	0-8	10-18	1.35-1.55	0.6-2.0	0.20-0.23	0.0-2.9	2.0-3.0	.37	.37	4	5	56
	8-12	13-23	1.40-1.60	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.43	.43			
	12-55	20-35	1.45-1.65	0.6-2.0	0.12-0.15	3.0-5.9	0.5-1.0	.32	.37			
	55-65	---	---	---	---	---	---	---	---			
178:												
Georgecreek	0-8	10-18	1.35-1.55	0.6-2.0	0.20-0.23	0.0-2.9	2.0-3.0	.37	.37	4	5	56
	8-12	13-23	1.40-1.60	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.43	.43			
	12-55	20-35	1.45-1.65	0.6-2.0	0.12-0.15	3.0-5.9	0.5-1.0	.32	.37			
	55-65	---	---	---	---	---	---	---	---			
179:												
Ginnis	0-8	5-12	1.15-1.35	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0	.20	.28	3	4	86
	8-24	8-15	1.35-1.55	2.0-6.0	0.08-0.11	0.0-2.9	0.0-0.5	.15	.28			
	24-34	---	---	---	---	---	---	---	---			
180:												
Ginnis	0-10	12-16	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.28	.32	3	5	56
	10-22	12-16	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32			
	22-31	10-16	1.40-1.60	2.0-6.0	0.09-0.12	0.0-2.9	0.5-1.0	.10	.24			
	31-41	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
181:												
Ginnis	0-18	12-16	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.28	.32	3	5	56
	18-23	12-16	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32			
	23-33	---	---	---	---	---	---	---	---			
182:												
Ginnis	0-10	12-16	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.28	.32	3	5	56
	10-22	12-16	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32			
	22-31	10-16	1.40-1.60	2.0-6.0	0.09-0.12	0.0-2.9	0.5-1.0	.10	.24			
	31-41	---	---	---	---	---	---	---	---			
Ginnis	0-18	12-16	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.28	.32	3	5	56
	18-23	12-16	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32			
	23-33	---	---	---	---	---	---	---	---			
183:												
Ginnis	0-9	10-15	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.20	.32	3	6	48
	9-22	12-16	1.35-1.55	2.0-6.0	0.06-0.09	0.0-2.9	0.5-1.0	.15	.28			
	22-32	---	---	---	---	---	---	---	---			
Ginnis	0-12	10-15	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.20	.32	3	6	48
	12-19	12-16	1.35-1.55	2.0-6.0	0.06-0.09	0.0-2.9	0.5-1.0	.15	.28			
	19-30	8-15	1.35-1.55	2.0-6.0	0.08-0.11	0.0-2.9	0.0-0.5	.15	.28			
	30-40	---	---	---	---	---	---	---	---			
184:												
Ginnis	0-10	12-16	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.28	.32	3	5	56
	10-22	12-16	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32			
	22-31	10-16	1.40-1.60	2.0-6.0	0.09-0.12	0.0-2.9	0.5-1.0	.10	.24			
	31-41	---	---	---	---	---	---	---	---			
Conconully	0-13	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	13-33	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	33-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
185:												
Ginnis	0-10	12-16	1.20-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.28	.32	3	5	56
	10-22	12-16	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32			
	22-31	10-16	1.40-1.60	2.0-6.0	0.09-0.12	0.0-2.9	0.5-1.0	.10	.24			
	31-41	---	---	---	---	---	---	---	---			
Conconully	0-12	8-12	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	12-21	3-15	1.40-1.70	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.24	.37			
	21-60	3-10	1.70-2.00	0.06-0.2	0.07-0.12	0.0-2.9	0.0-0.5	.17	.37			
186:												
Ginnis	0-8	5-12	1.15-1.35	0.6-2.0	0.08-0.11	0.0-2.9	1.0-2.0	.20	.28	3	4	86
	8-24	8-15	1.35-1.55	2.0-6.0	0.08-0.11	0.0-2.9	0.0-0.5	.15	.28			
	24-34	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
187:												
Glenrose	0-16	12-23	1.15-1.35	0.6-2.0	0.18-0.21	0.0-2.9	3.0-4.0	.32	.32	5	5	56
	16-27	12-23	1.25-1.45	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.32	.37			
	27-60	18-27	1.30-1.50	0.6-2.0	0.14-0.19	0.0-2.9	0.5-1.0	.43	.49			
188:												
Glenrose	0-16	12-23	1.15-1.35	0.6-2.0	0.18-0.21	0.0-2.9	3.0-4.0	.32	.32	5	5	56
	16-27	12-23	1.25-1.45	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.32	.37			
	27-60	18-27	1.30-1.50	0.6-2.0	0.14-0.19	0.0-2.9	0.5-1.0	.43	.49			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
189:												
Goddard	0-3	5-15	0.85-0.95	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.37	.37	2	5	56
	3-10	5-15	0.85-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-2.0	.32	.37			
	10-18	5-10	1.10-1.30	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.10	.28			
	18-60	0-5	1.30-1.50	20.0-100.0	0.02-0.05	0.0-2.9	0.0-0.5	.05	.17			
190:												
Goddard	0-3	5-15	0.85-0.95	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.37	.37	2	5	56
	3-10	5-15	0.85-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-2.0	.32	.37			
	10-18	5-10	1.10-1.30	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.10	.28			
	18-60	0-5	1.30-1.50	20.0-100.0	0.02-0.05	0.0-2.9	0.0-0.5	.05	.17			
191:												
Goddard	0-3	5-15	0.85-0.95	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.37	.37	2	5	56
	3-10	5-15	0.85-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-2.0	.32	.37			
	10-18	5-10	1.10-1.30	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.10	.28			
	18-60	0-5	1.30-1.50	20.0-100.0	0.02-0.05	0.0-2.9	0.0-0.5	.05	.17			
192:												
Goldlake	0-22	10-18	1.15-1.25	0.6-2.0	0.20-0.22	0.0-2.9	2.0-4.0	.43	.43	4	5	56
	22-29	10-18	1.25-1.35	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.28	.43			
	29-40	8-15	1.30-1.40	0.6-2.0	0.10-0.14	0.0-2.9	1.0-2.0	.17	.37			
	40-60	8-15	1.70-2.00	0.06-0.2	0.08-0.12	0.0-2.9	0.5-1.0	.10	.28			
193:												
Gooseflats	0-7	3-15	1.40-1.45	2.0-6.0	0.02-0.04	0.0-2.9	1.0-2.0	.32	.32	4	3	86
	7-41	2-8	1.55-1.65	6.0-20.0	0.05-0.06	0.0-2.9	0.5-1.0	.28	.28			
	41-48	---	1.55-1.70	---	---	---	---	---	---			
	48-60	2-8	1.55-1.65	6.0-20.0	0.00-0.00	0.0-2.9	0.0-0.5	.28	.28			
Gooseflats	0-7	2-12	1.40-1.45	2.0-6.0	0.02-0.04	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	7-28	2-8	1.55-1.60	6.0-20.0	0.04-0.06	0.0-2.9	0.5-1.0	.28	.28			
	28-60	2-5	1.55-1.65	6.0-20.0	0.02-0.05	0.0-2.9	0.0-0.5	.28	.28			
194:												
Growden	0-4	5-15	0.85-0.95	0.6-2.0	0.14-0.18	0.0-2.9	2.0-5.0	.28	.32	5	6	48
	4-10	5-15	0.85-0.95	0.6-2.0	0.13-0.18	0.0-2.9	1.0-2.0	.24	.32			
	10-22	8-16	1.45-1.60	2.0-6.0	0.05-0.14	0.0-2.9	0.0-2.0	.15	.37			
	22-60	8-16	1.45-1.60	2.0-6.0	0.03-0.10	0.0-2.9	0.5-1.0	.10	.37			
195:												
Hadencreek	0-13	17-22	1.30-1.40	0.6-2.0	0.21-0.24	3.0-5.9	1.0-2.0	.37	.37	5	5	56
	13-32	18-27	1.40-1.50	0.6-2.0	0.20-0.23	3.0-5.9	1.0-2.0	.37	.37			
	32-60	15-30	1.50-1.60	0.2-0.6	0.16-0.19	3.0-5.9	0.5-1.0	.49	.49			
196:												
Haley	0-12	2-8	1.20-1.40	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.37	.37	3	3	86
	12-28	2-8	1.35-1.50	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.43	.43			
	28-40	0-5	1.50-1.60	6.0-20.0	0.05-0.08	0.0-2.9	0.0-0.5	.10	.10			
	40-60	0-5	1.50-1.65	20.0-100.0	0.05-0.07	0.0-2.9	0.0-0.5	.05	.05			
197:												
Haley	0-12	2-8	1.20-1.40	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.37	.37	3	3	86
	12-28	2-8	1.35-1.50	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.43	.43			
	28-40	0-5	1.50-1.60	6.0-20.0	0.05-0.08	0.0-2.9	0.0-0.5	.10	.10			
	40-60	0-5	1.50-1.65	20.0-100.0	0.05-0.07	0.0-2.9	0.0-0.5	.05	.05			
198:												
Haley	0-12	2-8	1.20-1.40	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.37	.37	3	3	86
	12-28	2-8	1.35-1.50	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.43	.43			
	28-40	0-5	1.50-1.60	6.0-20.0	0.05-0.08	0.0-2.9	0.0-0.5	.10	.10			
	40-60	0-5	1.50-1.65	20.0-100.0	0.05-0.07	0.0-2.9	0.0-0.5	.05	.05			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
199:												
Hallcreek	0-11	10-18	0.75-0.85	0.6-2.0	0.16-0.18	0.0-2.9	0.5-1.0	.32	.32	2	5	56
	11-17	3-10	1.65-1.85	2.0-6.0	0.06-0.10	0.0-2.9	0.5-1.0	.17	.28			
	17-60	1-3	1.50-1.70	20.0-100.0	0.01-0.02	0.0-2.9	0.0-0.5	.02	.20			
200:												
Haploxerolls	0-3	5-15	1.35-1.55	0.6-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.17	.32	5	4	86
	3-11	5-15	1.35-1.55	0.6-6.0	0.07-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-60	5-30	1.50-1.70	0.6-20.0	0.02-0.17	0.0-2.9	0.0-1.0	.15	.28			
201:												
Hartill	0-6	5-15	0.75-0.85	0.6-2.0	0.16-0.19	0.0-2.9	2.0-4.0	.28	.32	2	5	56
	6-14	5-18	0.75-0.85	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.28	.32			
	14-30	8-15	1.50-1.60	0.6-2.0	0.06-0.10	0.0-2.9	0.0-1.0	.15	.32			
	30-39	8-15	1.50-1.60	0.6-2.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	39-43	---	---	---	---	---	---	---	---			
202:												
Hartill	0-6	5-15	0.75-0.85	0.6-2.0	0.16-0.19	0.0-2.9	2.0-4.0	.28	.32	2	5	56
	6-14	5-18	0.75-0.85	0.6-2.0	0.14-0.19	0.0-2.9	1.0-2.0	.28	.32			
	14-30	8-15	1.50-1.60	0.6-2.0	0.06-0.10	0.0-2.9	0.0-1.0	.15	.32			
	30-39	8-15	1.50-1.60	0.6-2.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	39-43	---	---	---	---	---	---	---	---			
203:												
Hellgate	0-12	7-12	1.40-1.50	2.0-6.0	0.09-0.11	0.0-2.9	1.0-3.0	.17	.24	3	4	86
	12-25	5-15	1.50-1.60	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.17	.28			
	25-36	2-8	1.50-1.60	6.0-20.0	0.06-0.09	0.0-2.9	0.5-1.0	.15	.28			
	36-60	1-5	1.50-1.60	6.0-20.0	0.02-0.05	0.0-2.9	0.0-0.5	.05	.15			
204:												
Hellgate	0-9	8-15	1.35-1.45	0.6-2.0	0.11-0.15	0.0-2.9	2.0-3.0	.20	.28	3	6	48
	9-22	5-15	1.50-1.60	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.17	.28			
	22-50	2-8	1.50-1.60	6.0-20.0	0.06-0.09	0.0-2.9	0.5-1.0	.15	.28			
	50-60	1-5	1.50-1.60	6.0-20.0	0.02-0.05	0.0-2.9	0.0-0.5	.05	.15			
205:												
Henneway	0-10	5-15	0.80-0.90	0.6-2.0	0.21-0.24	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	10-28	15-25	1.50-1.60	0.6-2.0	0.16-0.21	0.0-2.9	1.0-2.0	.37	.37			
	28-49	18-35	1.60-1.70	0.2-2.0	0.14-0.21	3.0-5.9	0.5-1.0	.37	.43			
	49-59	18-35	1.60-1.70	0.2-2.0	0.12-0.17	3.0-5.9	0.0-0.5	.28	.43			
	59-63	---	---	---	---	---	---	---	---			
206:												
Henneway	0-10	5-15	0.80-0.90	0.6-2.0	0.21-0.24	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	10-28	15-25	1.50-1.60	0.6-2.0	0.16-0.21	0.0-2.9	1.0-2.0	.37	.37			
	28-49	18-35	1.60-1.70	0.2-2.0	0.14-0.21	3.0-5.9	0.5-1.0	.37	.43			
	49-59	18-35	1.60-1.70	0.2-2.0	0.12-0.17	3.0-5.9	0.0-0.5	.28	.43			
	59-63	---	---	---	---	---	---	---	---			
207:												
Henneway	0-13	5-15	0.80-0.90	0.6-2.0	0.21-0.24	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	13-22	15-25	1.50-1.60	0.6-2.0	0.16-0.21	0.0-2.9	1.0-2.0	.37	.37			
	22-45	18-35	1.60-1.70	0.2-2.0	0.14-0.21	3.0-5.9	0.5-1.0	.37	.43			
	45-58	18-35	1.60-1.70	0.2-2.0	0.12-0.17	3.0-5.9	0.0-0.5	.28	.43			
	58-62	---	---	---	---	---	---	---	---			
208:												
Heytou	0-4	5-15	1.30-1.40	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.20	.43	3	6	48
	4-30	5-18	1.35-1.45	2.0-6.0	0.07-0.13	0.0-2.9	0.5-1.0	.15	.43			
	30-60	5-18	1.70-1.85	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.17	.49			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
208:												
Stubblefield	0-9	8-12	1.30-1.50	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.32	.32	3	6	48
	9-24	5-12	1.40-1.60	0.6-2.0	0.07-0.13	0.0-2.9	0.0-1.0	.15	.32			
	24-28	---	1.45-1.70	---	---	---	---	---	---			
	28-60	7-18	1.50-1.75	0.06-0.2	0.00-0.00	0.0-2.9	0.0-0.5	.20	.37			
209:												
Histosols	0-4	0-0	0.30-0.50	0.6-2.0	0.40-0.50	0.0-2.9	40-90	---	---	3	8	0
	4-20	0-0	0.30-0.50	0.6-2.0	0.40-0.50	0.0-2.9	20-40	---	---			
	20-32	15-30	1.20-1.35	0.6-2.0	0.10-0.20	0.0-2.9	10-30	.37	.37			
	32-60	2-20	0.75-1.50	0.6-20.0	0.03-0.20	0.0-2.9	10-20	.24	.32			
210:												
Hobohill	0-3	5-10	1.20-1.30	2.0-6.0	0.11-0.15	0.0-2.9	2.0-4.0	.20	.24	2	3	86
	3-18	5-10	1.30-1.40	2.0-6.0	0.08-0.12	0.0-2.9	1.0-2.0	.17	.24			
	18-30	0-5	1.60-1.70	6.0-20.0	0.03-0.06	0.0-2.9	0.5-1.0	.15	.24			
	30-60	0-5	1.60-1.70	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.20			
211:												
Hobohill	0-3	5-10	1.20-1.30	2.0-6.0	0.10-0.14	0.0-2.9	2.0-5.0	.17	.24	2	4	86
	3-14	5-10	1.30-1.40	2.0-6.0	0.08-0.12	0.0-2.9	1.0-2.0	.15	.24			
	14-23	1-5	1.60-1.70	6.0-20.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.24			
	23-60	1-5	1.60-1.70	6.0-20.0	0.02-0.06	0.0-2.9	0.0-0.5	.10	.24			
212:												
Hodgson	0-3	12-18	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	3-47	35-45	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
	47-60	25-42	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.32	.32			
213:												
Hodgson	0-3	12-18	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	3-47	35-45	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
	47-60	25-42	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.32	.32			
214:												
Hodgson	0-3	12-18	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	3-47	35-45	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
	47-60	25-42	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.32	.32			
215:												
Hodgson	0-3	12-18	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	3-47	35-45	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
	47-60	25-42	1.20-1.40	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.32	.32			
216:												
Hudnut	0-2	4-12	1.35-1.50	2.0-6.0	0.08-0.11	0.0-2.9	1.0-2.0	.24	.28	4	4	86
	2-50	4-12	1.40-1.55	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.20	.28			
	50-60	0-4	1.45-1.60	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.10	.28			
217:												
Hudnut	0-2	4-12	1.35-1.50	2.0-6.0	0.08-0.11	0.0-2.9	1.0-2.0	.24	.28	4	4	86
	2-50	4-12	1.40-1.55	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.20	.28			
	50-60	0-4	1.45-1.60	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.10	.28			
218:												
Hunters	0-10	14-18	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	10-28	18-22	1.30-1.45	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.43	.43			
	28-60	18-27	1.40-1.50	0.2-0.6	0.18-0.21	0.0-2.9	0.0-0.5	.43	.43			
219:												
Hunters	0-14	14-18	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	14-24	18-22	1.30-1.45	0.6-2.0	0.18-0.21	0.0-2.9	1.0-2.0	.43	.43			
	24-60	18-27	1.40-1.50	0.2-0.6	0.18-0.21	0.0-2.9	0.0-0.5	.43	.43			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
220:												
Inchelium	0-13	10-18	1.00-1.20	0.6-2.0	0.19-0.21	0.0-2.9	3.0-5.0	.37	.37	5	5	56
	13-42	10-18	1.10-1.30	0.6-2.0	0.15-0.21	0.0-2.9	2.0-3.0	.43	.43			
	42-51	18-30	1.45-1.65	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.43	.43			
	51-60	18-30	1.45-1.65	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
221:												
Inchelium	0-13	10-18	1.00-1.20	0.6-2.0	0.19-0.21	0.0-2.9	3.0-5.0	.37	.37	5	5	56
	13-42	10-18	1.10-1.30	0.6-2.0	0.15-0.21	0.0-2.9	2.0-3.0	.43	.43			
	42-51	18-30	1.45-1.65	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.43	.43			
	51-60	18-30	1.45-1.65	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37			
222:												
Inkler	0-3	5-15	0.65-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.32	.37	5	6	48
	3-9	5-18	0.70-0.85	0.6-2.0	0.10-0.18	0.0-2.9	1.0-2.0	.28	.37			
	9-18	5-18	0.85-1.15	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	18-31	8-18	1.35-1.65	2.0-6.0	0.07-0.13	0.0-2.9	0.0-0.5	.15	.32			
	31-60	7-15	1.35-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.0-0.5	.10	.32			
223:												
Inkler	0-3	5-15	0.65-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.32	.37	5	6	48
	3-9	5-18	0.70-0.85	0.6-2.0	0.10-0.18	0.0-2.9	1.0-2.0	.28	.37			
	9-18	5-18	0.85-1.15	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	18-31	8-18	1.35-1.65	2.0-6.0	0.07-0.13	0.0-2.9	0.0-0.5	.15	.32			
	31-60	7-15	1.35-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.0-0.5	.10	.32			
224:												
Inkler	0-3	5-15	0.65-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.32	.37	5	6	48
	3-9	5-18	0.70-0.85	0.6-2.0	0.10-0.18	0.0-2.9	1.0-2.0	.28	.37			
	9-18	5-18	0.85-1.15	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	18-31	8-18	1.35-1.65	2.0-6.0	0.07-0.13	0.0-2.9	0.0-0.5	.15	.32			
	31-60	7-15	1.35-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.0-0.5	.10	.32			
225:												
Inkler	0-3	5-15	0.65-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.32	.37	5	6	48
	3-9	5-18	0.70-0.85	0.6-2.0	0.10-0.18	0.0-2.9	1.0-2.0	.28	.37			
	9-18	5-18	0.85-1.15	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	18-31	8-18	1.35-1.65	2.0-6.0	0.07-0.13	0.0-2.9	0.0-0.5	.15	.32			
	31-60	7-15	1.35-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.0-0.5	.10	.32			
Baldknob	0-4	8-18	1.35-1.45	0.6-2.0	0.11-0.15	0.0-2.9	2.0-3.0	.20	.28	1	7	38
	4-14	8-18	1.40-1.60	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	14-18	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
226:												
Inkler	0-3	5-15	0.65-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.32	.37	5	6	48
	3-9	5-18	0.70-0.85	0.6-2.0	0.10-0.18	0.0-2.9	1.0-2.0	.28	.37			
	9-18	5-18	0.85-1.15	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	18-31	8-18	1.35-1.65	2.0-6.0	0.07-0.13	0.0-2.9	0.0-0.5	.15	.32			
	31-60	7-15	1.35-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.0-0.5	.10	.32			
Baldknob	0-4	8-18	1.35-1.45	0.6-2.0	0.11-0.15	0.0-2.9	2.0-3.0	.20	.28	1	7	38
	4-14	8-18	1.40-1.60	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	14-18	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
227:												
Inkler	0-3	5-15	0.65-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.32	.37	5	6	48
	3-9	5-18	0.70-0.85	0.6-2.0	0.10-0.18	0.0-2.9	1.0-2.0	.28	.37			
	9-18	5-18	0.85-1.15	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	18-31	8-18	1.35-1.65	2.0-6.0	0.07-0.13	0.0-2.9	0.0-0.5	.15	.32			
	31-60	7-15	1.35-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.0-0.5	.10	.32			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
228:												
Inkler	0-3	5-15	0.65-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-3.0	.32	.37	5	6	48
	3-9	5-18	0.70-0.85	0.6-2.0	0.10-0.18	0.0-2.9	1.0-2.0	.28	.37			
	9-18	5-18	0.85-1.15	0.6-2.0	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	18-31	8-18	1.35-1.65	2.0-6.0	0.07-0.13	0.0-2.9	0.0-0.5	.15	.32			
	31-60	7-15	1.35-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.0-0.5	.10	.32			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
229:												
Jimcreek	0-19	12-18	0.95-1.05	0.6-2.0	0.21-0.24	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	19-46	24-34	1.50-1.60	0.6-2.0	0.18-0.21	3.0-5.9	1.0-2.0	.43	.43			
	46-60	30-45	1.45-1.60	0.2-0.6	0.16-0.20	6.0-8.9	0.0-0.5	.37	.37			
230:												
Johntom	0-4	5-12	1.00-1.30	0.6-2.0	0.11-0.14	0.0-2.9	2.0-3.0	.20	.28	1	6	48
	4-11	5-15	1.10-1.40	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.32			
	11-16	5-15	1.20-1.50	2.0-6.0	0.04-0.07	0.0-2.9	0.5-1.0	.10	.28			
	16-20	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Rubble land	0-60	---	---	---	---	---	---	---	---	---	---	---
231:												
Karamin	0-6	5-10	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-2.0	.32	.32	2	3	86
	6-18	5-10	1.30-1.50	2.0-6.0	0.11-0.15	0.0-2.9	0.0-1.0	.32	.32			
	18-28	0-5	1.30-1.50	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.10	.10			
	28-60	0-5	1.45-1.60	20.0-100.0	0.05-0.08	0.0-2.9	0.0-0.5	.10	.10			
232:												
Karamin	0-6	5-10	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-2.0	.32	.32	2	3	86
	6-18	5-10	1.30-1.50	2.0-6.0	0.11-0.15	0.0-2.9	0.0-1.0	.32	.32			
	18-28	0-5	1.30-1.50	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.10	.10			
	28-60	0-5	1.45-1.60	20.0-100.0	0.05-0.08	0.0-2.9	0.0-0.5	.10	.10			
233:												
Karamin	0-6	5-10	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-2.0	.32	.32	2	3	86
	6-18	5-10	1.30-1.50	2.0-6.0	0.11-0.15	0.0-2.9	0.0-1.0	.32	.32			
	18-28	0-5	1.30-1.50	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.10	.10			
	28-60	0-5	1.45-1.60	20.0-100.0	0.05-0.08	0.0-2.9	0.0-0.5	.10	.10			
234:												
Kartar	0-6	5-10	1.20-1.40	2.0-6.0	0.11-0.13	0.0-2.9	1.0-2.0	.24	.28	3	3	86
	6-22	5-10	1.35-1.50	2.0-6.0	0.09-0.12	0.0-2.9	0.5-1.0	.17	.28			
	22-42	0-10	1.40-1.55	20.0-100.0	0.04-0.07	0.0-2.9	0.0-0.5	.10	.24			
	42-60	0-5	1.45-1.60	20.0-100.0	0.02-0.06	0.0-2.9	0.0-0.5	.05	.24			
235:												
Kellerbutte	0-5	5-15	0.75-0.85	0.6-2.0	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	5-17	5-18	0.80-0.95	0.6-2.0	0.18-0.22	0.0-2.9	1.0-2.0	.37	.43			
	17-60	5-12	1.40-1.60	0.6-6.0	0.04-0.10	0.0-2.9	0.5-1.0	.10	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
236:												
Kellerbutte	0-7	5-15	0.75-0.85	0.6-2.0	0.20-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-17	5-18	0.80-0.95	0.6-2.0	0.18-0.22	0.0-2.9	1.0-2.0	.37	.43			
	17-60	5-12	1.40-1.60	0.6-6.0	0.04-0.10	0.0-2.9	0.5-1.0	.10	.37			
237:												
Kenotrail	0-9	12-18	1.35-1.50	0.6-2.0	0.17-0.19	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	9-32	18-35	1.45-1.60	0.2-0.6	0.12-0.16	3.0-5.9	1.0-2.0	.28	.32			
	32-42	---	---	---	---	---	---	---	---			
238:												
Kewach	0-4	15-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.43	.43	5	5	56
	4-10	10-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43			
	10-29	25-40	1.40-1.55	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.32	.32			
	29-42	35-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.5-1.0	.28	.28			
	42-60	25-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.0-0.5	.28	.28			
239:												
Kewach	0-4	15-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.43	.43	5	5	56
	4-10	10-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43			
	10-29	25-40	1.40-1.55	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.32	.32			
	29-42	35-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.5-1.0	.28	.28			
	42-60	25-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.0-0.5	.28	.28			
240:												
Kewach	0-4	15-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.43	.43	5	5	56
	4-10	10-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43			
	10-29	25-40	1.40-1.55	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.32	.32			
	29-42	35-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.5-1.0	.28	.28			
	42-60	25-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.0-0.5	.28	.28			
241:												
Kewach	0-4	15-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.43	.43	5	5	56
	4-10	10-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43			
	10-29	25-40	1.40-1.55	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.32	.32			
	29-42	35-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.5-1.0	.28	.28			
	42-60	25-45	1.40-1.55	0.2-0.6	0.15-0.21	3.0-5.9	0.0-0.5	.28	.28			
242:												
Kiehl	0-10	5-15	0.65-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	3	5	56
	10-21	8-15	1.00-1.30	0.6-2.0	0.07-0.10	0.0-2.9	1.0-2.0	.17	.28			
	21-29	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.17	.24			
	29-60	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.05	.24			
243:												
Kiehl	0-10	5-15	0.65-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	3	5	56
	10-21	8-15	1.00-1.30	0.6-2.0	0.07-0.10	0.0-2.9	1.0-2.0	.17	.28			
	21-29	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.17	.24			
	29-60	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.05	.24			
244:												
Kiehl	0-10	5-15	0.65-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	3	5	56
	10-21	8-15	1.00-1.30	0.6-2.0	0.07-0.10	0.0-2.9	1.0-2.0	.17	.28			
	21-29	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.17	.24			
	29-60	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.05	.24			
245:												
Kiehl	0-14	5-15	0.65-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	2	5	56
	14-23	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.17	.24			
	23-60	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.05	.24			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
246:												
Kiehl	0-14	5-15	0.65-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	2	5	56
	14-23	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.17	.24			
	23-60	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.05	.24			
247:												
Kiehl	0-14	5-15	0.65-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	2	5	56
	14-23	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.17	.24			
	23-60	0-5	1.55-1.70	6.0-20.0	0.01-0.03	0.0-2.9	0.5-1.0	.05	.24			
248:												
Koepke	0-22	10-18	0.65-0.85	0.6-2.0	0.17-0.21	0.0-2.9	1.0-3.0	.37	.37	4	2	134
	22-40	5-10	1.30-1.50	0.6-2.0	0.10-0.13	0.0-2.9	0.0-0.5	.17	.37			
	40-60	2-10	1.70-2.00	0.06-0.2	0.05-0.08	0.0-2.9	0.0-0.5	.10	.37			
249:												
Lakesol	0-10	12-18	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.32	.32	5	5	56
	10-37	12-18	1.30-1.50	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.32	.32			
	37-60	10-18	1.30-1.50	0.2-0.6	0.17-0.21	0.0-2.9	0.5-1.0	.32	.32			
250:												
Lithic Xerorthents	0-2	8-18	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	2.0-4.0	.20	.37	1	6	48
	2-7	8-18	1.35-1.50	0.6-2.0	0.07-0.12	0.0-2.9	0.5-1.0	.15	.37			
	7-11	---	---	---	---	---	---	---	---			
Baldknob	0-4	8-18	1.35-1.45	0.6-2.0	0.11-0.15	0.0-2.9	2.0-3.0	.20	.28	1	7	38
	4-14	8-18	1.40-1.60	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	14-18	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
251:												
Lithic Xerorthents	0-2	8-18	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	2.0-4.0	.20	.37	1	6	48
	2-7	8-18	1.35-1.50	0.6-2.0	0.07-0.12	0.0-2.9	0.5-1.0	.15	.37			
	7-11	---	---	---	---	---	---	---	---			
Baldknob	0-4	8-18	1.35-1.45	0.6-2.0	0.11-0.15	0.0-2.9	2.0-3.0	.20	.28	1	7	38
	4-14	8-18	1.40-1.60	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	14-18	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
252:												
Logy	0-10	8-12	1.35-1.45	2.0-6.0	0.08-0.10	0.0-2.9	1.0-2.0	.15	.28	3	5	56
	10-24	5-12	1.40-1.50	2.0-6.0	0.04-0.07	0.0-2.9	1.0-2.0	.05	.28			
	24-60	2-5	1.45-1.55	6.0-20.0	0.01-0.04	0.0-2.9	0.0-1.0	.02	.20			
253:												
Loony	0-3	10-18	0.75-0.85	0.6-2.0	0.16-0.19	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	3-17	10-18	0.75-0.85	0.6-2.0	0.14-0.18	0.0-2.9	1.0-2.0	.37	.37			
	17-28	5-15	1.55-1.65	0.6-2.0	0.09-0.12	0.0-2.9	0.0-1.0	.24	.32			
	28-60	8-16	1.70-2.00	0.06-0.2	0.01-0.03	0.0-2.9	0.0-0.5	.28	.37			
254:												
Lostcreek	0-11	8-16	1.10-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	11-27	8-16	1.35-1.55	0.6-2.0	0.11-0.16	0.0-2.9	1.0-2.0	.24	.32			
	27-60	5-14	1.45-1.65	0.6-2.0	0.10-0.15	0.0-2.9	0.5-1.0	.20	.32			
255:												
Louiecreek	0-13	8-15	1.30-1.45	0.6-2.0	0.11-0.15	0.0-2.9	1.0-3.0	.24	.28	5	6	48
	13-20	8-15	1.35-1.50	0.6-2.0	0.07-0.13	0.0-2.9	1.0-2.0	.20	.28			
	20-32	8-15	1.40-1.55	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.15	.28			
	32-60	5-15	1.40-1.55	2.0-6.0	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
256:												
Louploup	0-6	5-15	0.65-0.85	0.6-2.0	0.21-0.23	0.0-2.9	2.0-4.0	.37	.43	4	5	56
	6-22	5-18	0.65-0.85	0.6-2.0	0.16-0.22	0.0-2.9	1.0-2.0	.43	.43			
	22-46	5-10	1.50-1.70	0.2-0.6	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	46-60	2-8	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	0.0-0.5	.10	.32			
257:												
Louploup	0-6	5-15	0.65-0.85	0.6-2.0	0.21-0.23	0.0-2.9	2.0-4.0	.37	.43	4	5	56
	6-22	5-18	0.65-0.85	0.6-2.0	0.16-0.22	0.0-2.9	1.0-2.0	.43	.43			
	22-46	5-10	1.50-1.70	0.2-0.6	0.08-0.14	0.0-2.9	0.5-1.0	.17	.32			
	46-60	2-8	1.70-2.00	0.06-0.2	0.04-0.10	0.0-2.9	0.0-0.5	.10	.32			
258:												
Lynxcreek	0-9	5-15	0.75-0.85	0.6-2.0	0.18-0.21	0.0-2.9	2.0-4.0	.43	.43	5	5	56
	9-36	18-35	1.45-1.65	0.2-0.6	0.16-0.19	3.0-5.9	1.0-2.0	.37	.43			
	36-60	18-35	1.45-1.65	0.2-0.6	0.16-0.19	3.0-5.9	0.5-1.0	.37	.43			
259:												
Malott	0-12	8-12	1.35-1.45	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.43	.43	4	3	86
	12-36	8-12	1.45-1.55	0.6-2.0	0.11-0.17	0.0-2.9	1.0-2.0	.32	.43			
	36-49	5-12	1.45-1.60	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.24	.43			
	49-60	---	1.50-1.70	---	---	---	---	---	---			
260:												
Malott	0-12	8-12	1.35-1.45	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.43	.43	4	3	86
	12-36	8-12	1.45-1.55	0.6-2.0	0.11-0.17	0.0-2.9	1.0-2.0	.32	.43			
	36-49	5-12	1.45-1.60	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.24	.43			
	49-60	---	1.50-1.70	---	---	---	---	---	---			
261:												
Malott	0-12	8-12	1.35-1.45	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.43	.43	4	3	86
	12-36	8-12	1.45-1.55	0.6-2.0	0.11-0.17	0.0-2.9	1.0-2.0	.32	.43			
	36-49	5-12	1.45-1.60	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.24	.43			
	49-60	---	1.50-1.70	---	---	---	---	---	---			
262:												
Malott	0-6	8-12	1.40-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.32	.37	4	4	86
	6-11	8-12	1.40-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.37			
	11-30	8-12	1.45-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.24	.37			
	30-53	5-12	1.50-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.20	.43			
	53-60	---	1.50-1.70	---	---	---	---	---	---			
263:												
Malott	0-6	8-12	1.40-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.32	.37	4	4	86
	6-11	8-12	1.40-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.37			
	11-30	8-12	1.45-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.24	.37			
	30-53	5-12	1.50-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.20	.43			
	53-60	---	1.50-1.70	---	---	---	---	---	---			
264:												
Malott	0-6	8-12	1.40-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.32	.37	4	4	86
	6-11	8-12	1.40-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.37			
	11-30	8-12	1.45-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.24	.37			
	30-53	5-12	1.50-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.20	.43			
	53-60	---	1.50-1.70	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
265:												
Malott	0-6	8-12	1.40-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.32	.37	4	4	86
	6-11	8-12	1.40-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.37			
	11-30	8-12	1.45-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.24	.37			
	30-53	5-12	1.50-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.20	.43			
	53-60	---	1.50-1.70	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
266:												
Malott	0-6	8-12	1.40-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.32	.37	4	4	86
	6-11	8-12	1.40-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.37			
	11-30	8-12	1.45-1.55	0.6-2.0	0.11-0.15	0.0-2.9	1.0-2.0	.24	.37			
	30-53	5-12	1.50-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.20	.43			
	53-60	---	1.50-1.70	---	---	---	---	---	---			
Torriorthents	0-6	5-12	1.40-1.50	0.6-2.0	0.12-0.14	0.0-2.9	0.0-0.5	.24	.43	5	6	48
	6-60	5-12	1.60-1.70	0.6-2.0	0.08-0.12	0.0-2.9	0.0-0.5	.15	.43			
267:												
Manley	0-12	5-15	0.60-0.90	0.6-2.0	0.18-0.20	0.0-2.9	2.0-5.0	.32	.32	3	2	134
	12-17	5-18	0.65-0.90	2.0-6.0	0.18-0.20	0.0-2.9	1.0-3.0	.28	.37			
	17-38	1-5	1.70-1.85	0.06-0.2	0.03-0.08	0.0-2.9	0.1-0.3	.05	.32			
	38-60	1-5	1.60-2.00	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	.02	.15			
268:												
Manley	0-12	5-15	0.60-0.90	0.6-2.0	0.18-0.20	0.0-2.9	2.0-5.0	.32	.32	3	2	134
	12-17	5-18	0.65-0.90	2.0-6.0	0.18-0.20	0.0-2.9	1.0-3.0	.28	.37			
	17-38	1-5	1.60-1.85	0.06-0.2	0.03-0.08	0.0-2.9	0.1-0.3	.05	.32			
	38-60	1-5	1.70-2.00	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	.02	.15			
269:												
Manley	0-12	5-15	0.60-0.90	0.6-2.0	0.18-0.20	0.0-2.9	2.0-5.0	.32	.32	3	2	134
	12-17	5-18	0.65-0.90	2.0-6.0	0.18-0.20	0.0-2.9	1.0-3.0	.28	.37			
	17-38	1-5	1.60-1.85	0.06-0.2	0.03-0.08	0.0-2.9	0.1-0.3	.05	.32			
	38-60	1-5	1.70-2.00	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	.02	.15			
270:												
Manley	0-12	5-15	0.60-0.90	0.6-2.0	0.18-0.20	0.0-2.9	2.0-5.0	.32	.32	3	2	134
	12-17	5-18	0.65-0.90	2.0-6.0	0.18-0.20	0.0-2.9	1.0-3.0	.28	.37			
	17-38	1-5	1.60-1.85	0.06-0.2	0.03-0.08	0.0-2.9	0.1-0.3	.05	.32			
	38-60	1-5	1.70-2.00	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	.02	.15			
Codylake	0-5	10-18	0.65-0.85	0.6-2.0	0.16-0.19	0.0-2.9	2.0-4.0	.37	.37	4	2	134
	5-24	5-18	0.65-0.85	2.0-6.0	0.15-0.18	0.0-2.9	1.0-2.0	.32	.37			
	24-43	3-8	1.45-1.65	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.20	.37			
	43-53	---	---	---	---	---	---	---	---			
271:												
Manley	0-12	5-15	0.60-0.90	0.6-2.0	0.18-0.20	0.0-2.9	2.0-5.0	.32	.32	3	2	134
	12-17	5-18	0.65-0.90	2.0-6.0	0.18-0.20	0.0-2.9	1.0-3.0	.28	.37			
	17-38	1-5	1.60-1.85	0.06-0.2	0.03-0.08	0.0-2.9	0.1-0.3	.05	.32			
	38-60	1-5	1.70-2.00	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	.02	.15			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
272:												
Manley	0-12	5-15	0.60-0.90	0.6-2.0	0.18-0.20	0.0-2.9	2.0-5.0	.32	.32	3	2	134
	12-17	5-18	0.65-0.90	2.0-6.0	0.18-0.20	0.0-2.9	1.0-3.0	.28	.37			
	17-38	1-5	1.60-1.85	0.06-0.2	0.03-0.08	0.0-2.9	0.1-0.3	.05	.32			
	38-60	1-5	1.70-2.00	0.06-0.2	0.02-0.04	0.0-2.9	0.0-0.2	.02	.15			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
273:												
Martella	0-3	5-15	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.37	5	5	56
	3-23	5-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.32	.32			
	23-46	18-35	1.25-1.45	0.6-2.0	0.17-0.21	3.0-5.9	0.5-1.0	.37	.37			
	46-60	18-35	1.25-1.45	0.6-2.0	0.17-0.21	3.0-5.9	0.0-0.5	.37	.37			
274:												
Martella	0-10	5-15	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.37	5	5	56
	10-46	18-35	1.25-1.45	0.6-2.0	0.17-0.21	3.0-5.9	0.5-1.0	.37	.37			
	46-60	18-35	1.25-1.45	0.6-2.0	0.17-0.21	3.0-5.9	0.0-0.5	.37	.37			
275:												
Martella	0-10	5-15	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.37	5	5	56
	10-46	18-35	1.25-1.45	0.6-2.0	0.17-0.21	3.0-5.9	0.5-1.0	.37	.37			
	46-60	18-35	1.25-1.45	0.6-2.0	0.17-0.21	3.0-5.9	0.0-0.5	.37	.37			
276:												
Medisaprists	0-10	0-0	0.30-0.60	0.6-2.0	0.50-0.70	0.0-2.9	40-90	---	---	5	8	0
	10-60	0-0	0.30-0.60	0.6-2.0	0.50-0.70	0.0-2.9	30-50	---	---			
277:												
Merkel	0-6	5-15	0.85-0.95	2.0-6.0	0.09-0.11	0.0-2.9	1.0-3.0	.24	.24	3	2	134
	6-29	5-15	0.95-1.10	2.0-6.0	0.08-0.11	0.0-2.9	0.0-1.0	.24	.28			
	29-35	1-5	1.60-1.85	0.06-0.2	0.05-0.08	0.0-2.9	0.0-1.0	.15	.28			
	35-60	1-5	1.70-2.00	0.06-0.2	0.05-0.07	0.0-2.9	0.0-0.5	.10	.28			
278:												
Merkel	0-6	5-15	0.85-0.95	2.0-6.0	0.09-0.11	0.0-2.9	1.0-3.0	.24	.24	3	2	134
	6-29	5-15	0.95-1.10	2.0-6.0	0.08-0.11	0.0-2.9	0.0-1.0	.24	.28			
	29-35	1-5	1.60-1.85	0.06-0.2	0.05-0.08	0.0-2.9	0.0-1.0	.15	.28			
	35-60	1-5	1.70-2.00	0.06-0.2	0.05-0.07	0.0-2.9	0.0-0.5	.10	.28			
279:												
Merkel	0-6	5-15	0.85-0.95	2.0-6.0	0.09-0.11	0.0-2.9	1.0-3.0	.24	.24	3	2	134
	6-29	5-15	0.95-1.10	2.0-6.0	0.08-0.11	0.0-2.9	0.0-1.0	.24	.28			
	29-35	1-5	1.60-1.85	0.06-0.2	0.05-0.08	0.0-2.9	0.0-1.0	.15	.28			
	35-60	1-5	1.70-2.00	0.06-0.2	0.05-0.07	0.0-2.9	0.0-0.5	.10	.28			
280:												
Merkel	0-3	8-12	0.85-0.95	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.20	.24	3	2	134
	3-21	5-15	0.95-1.10	2.0-6.0	0.08-0.11	0.0-2.9	0.0-1.0	.20	.28			
	21-60	1-5	1.70-2.00	0.06-0.2	0.06-0.08	0.0-2.9	0.0-0.5	.10	.28			
281:												
Merkel	0-3	8-12	0.85-0.95	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.20	.24	3	2	134
	3-21	5-15	0.95-1.10	2.0-6.0	0.08-0.11	0.0-2.9	0.0-1.0	.20	.28			
	21-60	1-5	1.70-2.00	0.06-0.2	0.06-0.08	0.0-2.9	0.0-0.5	.10	.28			
282:												
Mineral	0-6	10-15	1.00-1.20	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.15	.28	2	6	48
	6-12	7-15	1.20-1.30	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0	.15	.28			
	12-23	5-12	1.30-1.50	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.32			
	23-27	---	---	---	---	---	---	---	---			
283:												
Mineral	0-6	10-15	1.00-1.20	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.15	.28	2	6	48
	6-12	7-15	1.20-1.30	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0	.15	.28			
	12-23	5-12	1.30-1.50	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.32			
	23-27	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
284:												
Mineral	0-6	10-15	1.00-1.20	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.15	.28	2	6	48
	6-12	7-15	1.20-1.30	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0	.15	.28			
	12-23	5-12	1.30-1.50	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.32			
	23-27	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
285:												
Mineral	0-6	10-15	1.00-1.20	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.15	.28	2	6	48
	6-12	7-15	1.20-1.30	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0	.15	.28			
	12-23	5-12	1.30-1.50	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.32			
	23-27	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
286:												
Mineral	0-6	10-15	1.00-1.20	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.15	.28	2	6	48
	6-12	7-15	1.20-1.30	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0	.15	.28			
	12-23	5-12	1.30-1.50	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.32			
	23-27	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
287:												
Mineral	0-8	10-15	1.00-1.20	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.15	.28	2	6	48
	8-23	7-15	1.20-1.30	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0	.15	.28			
	23-27	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
288:												
Mitchellpoint	0-7	5-15	0.75-0.85	0.6-2.0	0.21-0.23	0.0-2.9	2.0-3.0	.43	.43	3	5	56
	7-14	5-15	0.85-0.95	0.6-2.0	0.20-0.22	0.0-2.9	1.0-2.0	.49	.49			
	14-20	15-25	1.55-1.65	0.6-2.0	0.12-0.20	3.0-5.9	1.0-2.0	.28	.43			
	20-26	18-27	1.50-1.60	0.6-2.0	0.14-0.19	3.0-5.9	0.5-1.0	.37	.43			
	26-60	1-5	1.50-1.60	20.0-100.0	0.01-0.04	0.0-2.9	0.0-0.5	.05	.20			
289:												
Monse	0-14	12-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.49	.49	5	5	56
	14-19	12-18	1.35-1.45	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.49	.49			
	19-40	24-32	1.35-1.45	0.6-2.0	0.19-0.21	3.0-5.9	0.5-1.0	.43	.43			
	40-60	24-32	1.45-1.55	0.2-0.6	0.19-0.21	3.0-5.9	0.0-0.5	.43	.43			
290:												
Morical	0-13	5-15	1.00-1.30	0.6-2.0	0.15-0.20	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	13-22	18-27	1.35-1.50	0.6-2.0	0.14-0.19	3.0-5.9	0.0-0.5	.32	.37			
	22-32	---	---	---	---	---	---	---	---			
291:												
Morical	0-13	5-15	1.00-1.30	0.6-2.0	0.15-0.20	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	13-22	18-27	1.35-1.50	0.6-2.0	0.14-0.19	3.0-5.9	0.0-0.5	.32	.37			
	22-32	---	---	---	---	---	---	---	---			
292:												
Morical	0-17	5-15	1.00-1.30	0.6-2.0	0.15-0.20	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	17-33	18-27	1.35-1.50	0.6-2.0	0.14-0.19	3.0-5.9	0.0-0.5	.32	.37			
	33-43	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
293:												
Moscow	0-3	5-15	0.65-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	3-11	5-18	0.65-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-2.0	.32	.37			
	11-34	2-8	1.35-1.55	2.0-6.0	0.12-0.16	0.0-2.9	0.5-1.0	.17	.28			
	34-44	---	---	---	---	---	---	---	---			
294:												
Moscow	0-11	5-15	0.65-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.37	.37	3	5	56
	11-34	5-18	1.35-1.55	2.0-6.0	0.12-0.16	0.0-2.9	0.5-1.0	.17	.28			
	34-44	---	---	---	---	---	---	---	---			
295:												
Moses	0-13	5-15	0.65-0.75	0.6-2.0	0.19-0.21	0.0-2.9	3.0-4.0	.32	.32	3	5	56
	13-20	5-10	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	1.0-2.0	.10	.28			
	20-34	5-10	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.28			
	34-44	---	---	---	---	---	---	---	---			
296:												
Moses	0-13	5-15	0.65-0.75	0.6-2.0	0.19-0.21	0.0-2.9	3.0-4.0	.32	.32	3	5	56
	13-20	5-10	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	1.0-2.0	.10	.28			
	20-34	5-10	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.28			
	34-44	---	---	---	---	---	---	---	---			
297:												
Moses	0-8	5-15	0.65-0.85	0.6-2.0	0.11-0.14	0.0-2.9	3.0-4.0	.20	.32	3	8	0
	8-22	5-10	1.45-1.55	2.0-6.0	0.04-0.07	0.0-2.9	1.0-2.0	.10	.28			
	22-30	2-10	1.45-1.55	2.0-6.0	0.03-0.07	0.0-2.9	0.5-1.0	.05	.24			
	30-40	---	---	---	---	---	---	---	---			
298:												
Moses	0-8	5-15	0.65-0.85	0.6-2.0	0.11-0.14	0.0-2.9	3.0-4.0	.20	.32	3	8	0
	8-22	5-10	1.45-1.55	2.0-6.0	0.04-0.07	0.0-2.9	1.0-2.0	.10	.28			
	22-30	2-10	1.45-1.55	2.0-6.0	0.03-0.07	0.0-2.9	0.5-1.0	.05	.24			
	30-40	---	---	---	---	---	---	---	---			
299:												
Narcisse	0-25	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.43	.43	5	5	56
	25-42	10-18	1.40-1.50	0.6-2.0	0.13-0.21	0.0-2.9	1.0-2.0	.37	.49			
	42-60	1-16	1.50-1.75	0.6-20.0	0.07-0.19	0.0-2.9	0.5-1.0	.28	.49			
300:												
Narcisse	0-21	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.43	.43	5	5	56
	21-31	10-18	1.40-1.50	0.6-2.0	0.13-0.21	0.0-2.9	1.0-2.0	.37	.49			
	31-46	8-16	1.40-1.55	0.6-2.0	0.11-0.21	0.0-2.9	1.0-3.0	.37	.49			
	46-60	1-16	1.50-1.75	0.6-20.0	0.07-0.19	0.0-2.9	0.5-1.0	.28	.49			
301:												
Nespelem	0-12	10-15	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	12-22	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	0.0-1.0	.43	.43			
	22-24	---	1.45-1.60	---	---	---	---	---	---			
	24-60	10-30	1.20-1.40	0.6-2.0	0.00-0.00	0.0-2.9	0.0-0.5	.43	.43			
302:												
Nespelem	0-19	10-15	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	19-30	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	0.0-1.0	.43	.43			
	30-32	---	1.45-1.60	---	---	---	---	---	---			
	32-60	10-30	1.20-1.40	0.6-2.0	0.00-0.00	0.0-2.9	0.0-0.5	.43	.43			
Nespelem	0-8	10-15	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	8-36	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	0.0-1.0	.43	.43			
	36-38	---	1.45-1.60	---	---	---	---	---	---			
	38-60	10-30	1.20-1.40	0.2-0.6	0.00-0.00	0.0-2.9	0.0-0.5	.43	.43			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
303:												
Nespelem	0-12	10-15	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	12-22	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	0.0-1.0	.43	.43			
	22-24	---	1.45-1.60	---	---	---	---	---	---			
	24-60	10-30	1.20-1.40	0.6-2.0	0.00-0.00	0.0-2.9	0.0-0.5	.43	.43			
Emdent	0-16	5-15	0.75-0.95	0.6-2.0	0.16-0.20	0.0-2.9	1.0-4.0	.43	.43	5	2	134
	16-60	5-15	0.75-0.95	0.6-2.0	0.16-0.20	0.0-2.9	0.0-0.5	.49	.49			
304:												
Nespelem	0-12	10-15	1.15-1.35	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	12-22	10-18	1.30-1.45	0.6-2.0	0.19-0.21	0.0-2.9	0.0-1.0	.43	.43			
	22-24	---	1.45-1.60	---	---	---	---	---	---			
	24-60	10-30	1.20-1.40	0.6-2.0	0.00-0.00	0.0-2.9	0.0-0.5	.43	.43			
Typic Xerorthents	0-9	10-25	1.45-1.50	0.2-0.6	0.15-0.19	0.0-2.9	0.0-0.5	.55	.55	5	4L	86
	9-60	10-25	1.45-1.50	0.2-0.6	0.15-0.19	0.0-2.9	0.0-0.5	.55	.55			
305:												
Neuske	0-5	10-18	1.00-1.20	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	4	5	56
	5-24	12-27	1.20-1.40	0.6-2.0	0.17-0.20	3.0-5.9	1.0-2.0	.37	.37			
	24-39	18-27	1.35-1.50	0.6-2.0	0.17-0.20	3.0-5.9	0.5-1.0	.37	.37			
	39-50	18-35	1.35-1.50	0.2-0.6	0.12-0.19	3.0-5.9	0.0-0.5	.24	.37			
	50-60	15-30	1.70-2.00	0.06-0.2	0.10-0.18	3.0-5.9	0.0-0.5	.20	.37			
306:												
Neuske	0-5	10-18	1.00-1.20	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	4	5	56
	5-24	12-27	1.20-1.40	0.6-2.0	0.17-0.20	3.0-5.9	1.0-2.0	.37	.37			
	24-39	18-27	1.35-1.50	0.6-2.0	0.17-0.20	3.0-5.9	0.5-1.0	.37	.37			
	39-50	18-35	1.35-1.50	0.2-0.6	0.12-0.19	3.0-5.9	0.0-0.5	.24	.37			
	50-60	15-30	1.70-2.00	0.06-0.2	0.10-0.18	3.0-5.9	0.0-0.5	.20	.37			
307:												
Nevine	0-9	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	9-18	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	18-28	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	28-41	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	41-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
Nevine	0-7	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	7-15	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	15-25	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	25-38	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	38-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
308:												
Nevine	0-9	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	9-18	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	18-28	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	28-41	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	41-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
Nevine	0-7	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	7-15	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	15-25	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	25-38	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	38-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
309:												
Nevine	0-9	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	9-18	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	18-28	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	28-41	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	41-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
Nevine	0-7	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	7-15	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	15-25	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	25-38	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	38-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
310:												
Nevine	0-9	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	9-18	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	18-28	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	28-41	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	41-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
Nevine	0-7	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	7-15	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	15-25	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	25-38	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	38-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
311:												
Nevine	0-9	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	9-18	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	18-28	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	28-41	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	41-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
Nevine	0-7	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	1.0-5.0	.37	.37	3	2	134
	7-15	5-18	0.65-0.85	0.6-2.0	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43			
	15-25	2-10	1.50-1.75	2.0-6.0	0.06-0.12	0.0-2.9	0.5-1.0	.15	.43			
	25-38	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
	38-60	2-10	1.70-2.00	0.06-0.2	0.04-0.08	0.0-2.9	0.0-0.5	.10	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
312:												
Newbell	0-11	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	11-21	8-12	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.5-1.0	.10	.32			
	21-60	8-12	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
313:												
Newbell	0-11	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	11-21	8-12	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.5-1.0	.10	.32			
	21-60	8-12	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
314:												
Newbell	0-11	5-15	0.65-0.85	0.6-2.0	0.18-0.21	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	11-21	8-12	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.5-1.0	.10	.32			
	21-60	8-12	1.70-2.00	0.06-0.2	0.05-0.12	0.0-2.9	0.0-0.5	.10	.32			
315:												
Northstar	0-10	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	10-26	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
316:												
Northstar	0-10	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	10-26	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			
317:												
Northstar	0-2	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	2-18	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	18-27	8-15	1.50-1.60	2.0-6.0	0.03-0.07	0.0-2.9	0.0-1.0	.10	.37			
	27-31	---	---	---	---	---	---	---	---			
Johntom	0-4	5-12	1.00-1.30	0.6-2.0	0.11-0.14	0.0-2.9	2.0-3.0	.20	.28	1	6	48
	4-11	5-15	1.10-1.40	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.32			
	11-16	5-15	1.20-1.50	2.0-6.0	0.04-0.07	0.0-2.9	0.5-1.0	.10	.28			
	16-20	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
318:												
Northstar	0-2	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	2-18	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	18-27	8-15	1.50-1.60	2.0-6.0	0.03-0.07	0.0-2.9	0.0-1.0	.10	.37			
	27-31	---	---	---	---	---	---	---	---			
Johntom	0-4	5-12	1.00-1.30	0.6-2.0	0.11-0.14	0.0-2.9	2.0-3.0	.20	.28	1	6	48
	4-11	5-15	1.10-1.40	0.6-2.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.32			
	11-16	5-15	1.20-1.50	2.0-6.0	0.04-0.07	0.0-2.9	0.5-1.0	.10	.28			
	16-20	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
319:												
Northstar	0-2	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	2-18	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	18-27	8-15	1.50-1.60	2.0-6.0	0.03-0.07	0.0-2.9	0.0-1.0	.10	.37			
	27-31	---	---	---	---	---	---	---	---			
Louiecreek	0-13	8-15	1.30-1.45	0.6-2.0	0.11-0.15	0.0-2.9	1.0-3.0	.24	.28	5	6	48
	13-20	8-15	1.35-1.50	0.6-2.0	0.07-0.13	0.0-2.9	1.0-2.0	.20	.28			
	20-32	8-15	1.40-1.55	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.15	.28			
	32-60	5-15	1.40-1.55	2.0-6.0	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
320:												
Northstar	0-2	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	2-18	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	18-27	8-15	1.50-1.60	2.0-6.0	0.03-0.07	0.0-2.9	0.0-1.0	.10	.37			
	27-31	---	---	---	---	---	---	---	---			
Louiecreek	0-13	8-15	1.30-1.45	0.6-2.0	0.11-0.15	0.0-2.9	1.0-3.0	.24	.28	5	6	48
	13-20	8-15	1.35-1.50	0.6-2.0	0.07-0.13	0.0-2.9	1.0-2.0	.20	.28			
	20-32	8-15	1.40-1.55	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.15	.28			
	32-60	5-15	1.40-1.55	2.0-6.0	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
321:												
Northstar	0-2	8-15	1.45-1.55	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.20	.32	2	6	48
	2-18	8-15	1.50-1.60	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.15	.32			
	18-27	8-15	1.50-1.60	2.0-6.0	0.03-0.07	0.0-2.9	0.0-1.0	.10	.37			
	27-31	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
321:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
322:												
Ohscow	0-4	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.43	.43	4	5	56
	4-11	5-18	0.75-0.85	0.6-2.0	0.12-0.19	0.0-2.9	1.0-2.0	.20	.43			
	11-27	2-8	1.40-1.60	2.0-6.0	0.07-0.08	0.0-2.9	0.5-1.0	.05	.32			
	27-46	2-8	1.40-1.60	2.0-6.0	0.05-0.07	0.0-2.9	0.5-1.0	.02	.32			
	46-60	2-8	1.40-1.60	6.0-20.0	0.03-0.04	0.0-2.9	0.0-0.5	.02	.17			
323:												
Ohscow	0-4	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.43	.43	4	5	56
	4-11	5-18	0.75-0.85	0.6-2.0	0.12-0.19	0.0-2.9	1.0-2.0	.20	.43			
	11-27	2-8	1.40-1.60	2.0-6.0	0.07-0.08	0.0-2.9	0.5-1.0	.05	.32			
	27-46	2-8	1.40-1.60	2.0-6.0	0.05-0.07	0.0-2.9	0.5-1.0	.02	.32			
	46-60	2-8	1.40-1.60	6.0-20.0	0.03-0.04	0.0-2.9	0.0-0.5	.02	.17			
324:												
Ohscow	0-5	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.43	.43	3	5	56
	5-14	5-18	0.75-0.85	0.6-2.0	0.12-0.19	0.0-2.9	1.0-2.0	.20	.43			
	14-25	2-8	1.40-1.60	2.0-6.0	0.07-0.08	0.0-2.9	0.5-1.0	.05	.32			
	25-39	2-8	1.40-1.60	2.0-6.0	0.05-0.07	0.0-2.9	0.5-1.0	.02	.32			
	39-60	2-8	1.40-1.60	6.0-20.0	0.03-0.04	0.0-2.9	0.0-0.5	.02	.17			
325:												
Ohscow	0-5	5-15	0.75-0.85	0.6-2.0	0.17-0.21	0.0-2.9	2.0-4.0	.43	.43	3	5	56
	5-14	5-18	0.75-0.85	0.6-2.0	0.12-0.19	0.0-2.9	1.0-2.0	.20	.43			
	14-25	2-8	1.40-1.60	2.0-6.0	0.07-0.08	0.0-2.9	0.5-1.0	.05	.32			
	25-39	2-8	1.40-1.60	2.0-6.0	0.05-0.07	0.0-2.9	0.5-1.0	.02	.32			
	39-60	2-8	1.40-1.60	6.0-20.0	0.03-0.04	0.0-2.9	0.0-0.5	.02	.17			
326:												
Okanogan	0-14	8-15	1.30-1.45	0.6-2.0	0.16-0.19	0.0-2.9	1.0-3.0	.49	.49	5	5	56
	14-42	5-15	1.35-1.45	0.6-2.0	0.16-0.19	0.0-2.9	1.0-2.0	.49	.49			
	42-60	3-15	1.40-1.50	0.6-20.0	0.11-0.15	0.0-2.9	0.0-1.0	.32	.37			
327:												
Omak	0-10	10-18	1.35-1.45	0.6-2.0	0.18-0.21	0.0-2.9	2.0-4.0	.43	.43	2	5	56
	10-26	15-25	1.50-1.55	0.6-2.0	0.15-0.20	0.0-2.9	1.0-2.0	.43	.43			
	26-38	35-45	1.40-1.45	0.2-0.6	0.15-0.20	3.0-5.9	0.5-1.0	.28	.32			
	38-45	---	1.45-1.65	---	---	---	---	---	---			
	45-60	---	1.60-1.80	---	---	---	---	---	---			
328:												
Owhi	0-12	7-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	12-20	5-12	1.35-1.50	2.0-6.0	0.09-0.12	0.0-2.9	0.0-1.0	.24	.43			
	20-26	5-10	1.35-1.50	2.0-6.0	0.09-0.11	0.0-2.9	0.0-1.0	.17	.43			
	26-60	0-5	1.40-1.60	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.05	.24			
329:												
Owhi	0-6	7-15	1.20-1.40	0.6-2.0	0.14-0.17	0.0-2.9	1.0-2.0	.24	.37	3	6	48
	6-23	5-12	1.35-1.50	2.0-6.0	0.08-0.12	0.0-2.9	0.0-1.0	.24	.43			
	23-60	0-5	1.40-1.60	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.05	.24			
330:												
Owhi	0-9	5-10	1.20-1.40	2.0-6.0	0.12-0.14	0.0-2.9	1.0-2.0	.37	.37	2	3	86
	9-18	5-10	1.35-1.50	2.0-6.0	0.09-0.11	0.0-2.9	0.0-1.0	.17	.43			
	18-60	0-5	1.40-1.60	20.0-100.0	0.01-0.03	0.0-2.9	0.0-0.5	.05	.24			
Haley	0-10	2-8	1.20-1.40	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.37	.37	3	3	86
	10-24	2-8	1.35-1.50	0.6-2.0	0.12-0.14	0.0-2.9	1.0-2.0	.43	.43			
	24-30	0-5	1.50-1.60	6.0-20.0	0.05-0.08	0.0-2.9	0.0-0.5	.10	.10			
	30-60	0-5	1.50-1.65	20.0-100.0	0.05-0.07	0.0-2.9	0.0-0.5	.05	.05			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
331:												
Oxerine	0-5	5-15	0.65-0.85	0.6-2.0	0.17-0.19	0.0-2.9	1.0-3.0	.32	.37	2	5	56
	5-20	8-15	1.45-1.60	0.6-2.0	0.09-0.11	0.0-2.9	0.0-1.0	.10	.32			
	20-28	8-15	1.45-1.60	2.0-6.0	0.04-0.05	0.0-2.9	0.0-0.5	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
332:												
Oxerine	0-5	5-15	0.65-0.85	0.6-2.0	0.17-0.19	0.0-2.9	1.0-3.0	.32	.37	2	5	56
	5-20	8-15	1.45-1.60	0.6-2.0	0.09-0.11	0.0-2.9	0.0-1.0	.10	.32			
	20-28	8-15	1.45-1.60	2.0-6.0	0.04-0.05	0.0-2.9	0.0-0.5	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
333:												
Oxerine	0-5	5-15	0.65-0.85	0.6-2.0	0.17-0.19	0.0-2.9	1.0-3.0	.32	.37	2	5	56
	5-20	8-15	1.45-1.60	0.6-2.0	0.09-0.11	0.0-2.9	0.0-1.0	.10	.32			
	20-28	8-15	1.45-1.60	2.0-6.0	0.04-0.05	0.0-2.9	0.0-0.5	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
334:												
Oxerine	0-5	5-15	0.65-0.85	0.6-2.0	0.17-0.19	0.0-2.9	1.0-3.0	.32	.37	2	5	56
	5-20	8-15	1.45-1.60	0.6-2.0	0.09-0.11	0.0-2.9	0.0-1.0	.10	.32			
	20-28	8-15	1.45-1.60	2.0-6.0	0.04-0.05	0.0-2.9	0.0-0.5	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
335:												
Oxerine	0-5	5-15	0.65-0.85	0.6-2.0	0.17-0.19	0.0-2.9	1.0-3.0	.32	.37	2	5	56
	5-20	8-15	1.45-1.60	0.6-2.0	0.09-0.11	0.0-2.9	0.0-1.0	.10	.32			
	20-28	8-15	1.45-1.60	2.0-6.0	0.04-0.05	0.0-2.9	0.0-0.5	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
336:												
Parmenter	0-4	5-15	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.43	2	2	134
	4-16	5-18	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.32	.43			
	16-60	0-5	1.45-1.65	20.0-100.0	0.01-0.04	0.0-2.9	0.5-1.0	.05	.28			
337:												
Parmenter	0-4	5-15	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.43	2	2	134
	4-16	5-18	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.32	.43			
	16-60	0-5	1.45-1.65	20.0-100.0	0.01-0.04	0.0-2.9	0.5-1.0	.05	.28			
338:												
Parmenter	0-4	5-15	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	2.0-4.0	.37	.43	2	2	134
	4-16	5-18	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-3.0	.32	.43			
	16-60	0-5	1.45-1.65	20.0-100.0	0.01-0.04	0.0-2.9	0.5-1.0	.05	.28			
339:												
Parmenter	0-5	5-15	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.43	2	2	134
	5-15	5-18	0.70-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.28	.43			
	15-60	0-5	1.40-1.60	20.0-100.0	0.01-0.04	0.0-2.9	0.5-1.0	.05	.28			
340:												
Peshastin	0-10	5-10	1.25-1.45	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.37	.49	3	4	86
	10-21	5-10	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	0.5-1.0	.20	.49			
	21-60	0-5	1.40-1.60	2.0-6.0	0.04-0.07	0.0-2.9	0.0-0.5	.05	.49			
341:												
Peshastin	0-10	5-10	1.25-1.45	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.37	.49	3	4	86
	10-21	5-10	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	0.5-1.0	.20	.49			
	21-60	0-5	1.40-1.60	2.0-6.0	0.04-0.07	0.0-2.9	0.0-0.5	.05	.49			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
342:												
Peshastin	0-8	5-10	1.20-1.40	0.6-2.0	0.10-0.13	0.0-2.9	1.0-2.0	.10	.49	3	8	0
	8-22	5-10	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	0.5-1.0	.20	.49			
	22-60	0-5	1.40-1.60	2.0-6.0	0.04-0.07	0.0-2.9	0.0-0.5	.05	.49			
343:												
Phoebe	0-11	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	4	3	86
	11-47	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	47-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
344:												
Phoebe	0-11	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	4	3	86
	11-47	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	47-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
345:												
Phoebe	0-11	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	4	3	86
	11-47	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	47-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
346:												
Phoebe	0-11	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	4	3	86
	11-47	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	47-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
347:												
Phoebe	0-10	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	3	3	86
	10-27	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	27-36	10-15	1.45-1.65	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
	36-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
348:												
Phoebe	0-10	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	3	3	86
	10-27	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	27-36	10-15	1.45-1.65	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
	36-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
349:												
Phoebe	0-10	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	3	3	86
	10-27	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	27-36	10-15	1.45-1.65	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
	36-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
350:												
Phoebe	0-16	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32	3	3	86
	16-30	10-15	1.45-1.65	2.0-6.0	0.12-0.16	0.0-2.9	1.0-2.0	.32	.32			
	30-39	10-15	1.45-1.65	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.28	.28			
	39-60	1-5	1.50-1.70	20.0-100.0	0.07-0.09	0.0-2.9	0.0-0.5	.10	.10			
Dehart	0-7	8-12	1.45-1.55	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.24	.28	5	6	48
	7-32	8-15	1.55-1.65	0.6-2.0	0.08-0.10	0.0-2.9	0.5-1.0	.15	.28			
	32-60	8-15	1.55-1.65	2.0-6.0	0.03-0.08	0.0-2.9	0.0-0.5	.05	.28			
351:												
Picard	0-5	5-15	1.45-1.55	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.43	.43	5	3	86
	5-16	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32			
	16-40	5-15	1.55-1.65	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.43	.43			
	40-51	5-15	1.55-1.65	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.43	.43			
	51-60	5-15	1.55-1.65	6.0-20.0	0.09-0.13	0.0-2.9	0.0-0.5	.20	.43			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
352:												
Picard	0-5	5-15	1.45-1.55	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.43	.43	5	3	86
	5-16	10-15	1.40-1.55	2.0-6.0	0.14-0.18	0.0-2.9	2.0-3.0	.32	.32			
	16-40	5-15	1.55-1.65	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.43	.43			
	40-51	5-15	1.55-1.65	2.0-6.0	0.11-0.15	0.0-2.9	0.5-1.0	.43	.43			
	51-60	5-15	1.55-1.65	6.0-20.0	0.09-0.13	0.0-2.9	0.0-0.5	.20	.43			
353:												
Pits	0-60	---	---	---	---	---	---	---	---	---	---	---
354:												
Pogue	0-8	5-10	1.20-1.40	2.0-6.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.32	3	3	86
	8-22	5-10	1.35-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.0-1.0	.24	.43			
	22-60	0-5	1.50-1.65	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
355:												
Pogue	0-8	5-10	1.20-1.40	2.0-6.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.32	3	3	86
	8-22	5-10	1.35-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.0-1.0	.24	.43			
	22-60	0-5	1.50-1.65	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
356:												
Pogue	0-8	5-10	1.20-1.40	2.0-6.0	0.11-0.15	0.0-2.9	1.0-2.0	.32	.32	3	3	86
	8-22	5-10	1.35-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.0-1.0	.24	.43			
	22-60	0-5	1.50-1.65	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
357:												
Pogue	0-12	5-10	1.20-1.40	2.0-6.0	0.10-0.12	0.0-2.9	1.0-2.0	.20	.37	3	4	86
	12-29	5-10	1.35-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.0-1.0	.24	.43			
	29-60	0-5	1.50-1.65	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
358:												
Pogue	0-7	5-10	1.20-1.40	2.0-6.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	7-21	5-10	1.35-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.0-1.0	.20	.43			
	21-60	0-10	1.50-1.65	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
359:												
Pogue	0-7	5-10	1.20-1.40	2.0-6.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.37	3	4	86
	7-21	5-10	1.35-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.0-1.0	.20	.43			
	21-60	0-10	1.50-1.65	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
360:												
Poween	0-12	8-18	1.25-1.45	0.6-2.0	0.16-0.18	0.0-2.9	2.0-4.0	.43	.43	5	4L	86
	12-30	5-18	1.30-1.50	0.6-2.0	0.13-0.19	0.0-2.9	1.0-2.0	.43	.49			
	30-44	5-18	1.35-1.55	0.6-2.0	0.12-0.16	0.0-2.9	0.5-1.0	.37	.37			
	44-60	5-25	1.35-1.55	0.6-2.0	0.11-0.19	0.0-2.9	0.0-0.5	.37	.43			
361:												
Quincy	0-1	0-5	1.40-1.50	20.0-100.0	0.04-0.07	0.0-2.9	0.5-1.0	.15	.15	5	1	250
	1-60	0-5	1.45-1.55	20.0-100.0	0.04-0.08	0.0-2.9	0.0-0.5	.28	.28			
362:												
Quincy	0-5	0-5	1.40-1.50	20.0-100.0	0.04-0.07	0.0-2.9	0.5-1.0	.15	.15	5	1	250
	5-60	0-5	1.45-1.55	20.0-100.0	0.04-0.08	0.0-2.9	0.0-0.5	.28	.28			
363:												
Quincy	0-12	0-5	1.40-1.50	6.0-20.0	0.06-0.11	0.0-2.9	0.5-1.0	.32	.32	5	2	134
	12-40	0-5	1.45-1.55	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.28	.28			
	40-49	0-5	1.45-1.55	20.0-100.0	0.03-0.07	0.0-2.9	0.0-0.5	.10	.20			
	49-60	0-5	1.45-1.55	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.15	.15			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
364:												
Quincy	0-5	0-5	1.40-1.50	6.0-20.0	0.06-0.11	0.0-2.9	0.5-1.0	.32	.32	5	2	134
	5-28	0-5	1.45-1.55	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.28	.28			
	28-52	0-5	1.45-1.55	20.0-100.0	0.04-0.08	0.0-2.9	0.0-0.5	.28	.28			
	52-60	0-5	1.45-1.55	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.15	.15			
365:												
Quincy	0-1	0-5	1.40-1.50	6.0-20.0	0.06-0.11	0.0-2.9	0.5-1.0	.32	.32	5	2	134
	1-28	0-5	1.45-1.55	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.28	.28			
	28-52	0-5	1.45-1.55	20.0-100.0	0.04-0.08	0.0-2.9	0.0-0.5	.28	.28			
	52-60	0-5	1.45-1.55	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.15	.15			
366:												
Quincy	0-5	0-5	1.40-1.50	6.0-20.0	0.06-0.11	0.0-2.9	0.5-1.0	.32	.32	5	2	134
	5-28	0-5	1.45-1.55	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.28	.28			
	28-52	0-5	1.45-1.55	20.0-100.0	0.04-0.08	0.0-2.9	0.0-0.5	.28	.28			
	52-60	0-5	1.45-1.55	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.15	.15			
367:												
Quincy	0-7	0-5	1.40-1.50	6.0-20.0	0.06-0.11	0.0-2.9	0.5-1.0	.32	.32	5	2	134
	7-17	0-5	1.45-1.55	6.0-20.0	0.05-0.10	0.0-2.9	0.0-0.5	.28	.28			
	17-60	0-5	1.45-1.55	20.0-100.0	0.04-0.08	0.0-2.9	0.0-0.5	.28	.28			
Aeneas	0-10	2-10	1.20-1.40	2.0-6.0	0.13-0.15	0.0-2.9	1.0-3.0	.32	.32	3	3	86
	10-27	2-10	1.35-1.50	2.0-6.0	0.10-0.15	0.0-2.9	0.5-1.0	.32	.37			
	27-60	0-2	1.40-1.55	6.0-20.0	0.05-0.07	0.0-2.9	0.0-0.5	.10	.10			
368:												
Raisio	0-5	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	5-12	8-15	1.25-1.45	0.6-2.0	0.06-0.09	0.0-2.9	1.0-2.0	.15	.32			
	12-28	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
369:												
Raisio	0-5	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	5-12	8-15	1.25-1.45	0.6-2.0	0.06-0.09	0.0-2.9	1.0-2.0	.15	.32			
	12-28	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
370:												
Raisio	0-8	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	8-14	8-15	1.25-1.45	0.6-2.0	0.06-0.09	0.0-2.9	1.0-2.0	.15	.32			
	14-24	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	24-28	---	---	---	---	---	---	---	---			
Rufus	0-7	8-15	1.15-1.35	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.20	.37	1	6	48
	7-14	8-15	1.30-1.50	0.6-2.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.37			
	14-18	---	---	---	---	---	---	---	---			
371:												
Raisio	0-8	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	8-14	8-15	1.25-1.45	0.6-2.0	0.06-0.09	0.0-2.9	1.0-2.0	.15	.32			
	14-24	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	24-28	---	---	---	---	---	---	---	---			
Rufus	0-7	8-15	1.15-1.35	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.20	.37	1	6	48
	7-14	8-15	1.30-1.50	0.6-2.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.37			
	14-18	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
372:												
Raisio	0-5	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	5-12	8-15	1.25-1.45	0.6-2.0	0.06-0.09	0.0-2.9	1.0-2.0	.15	.32			
	12-28	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
Rufus	0-5	8-15	1.15-1.35	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.20	.37	1	6	48
	5-15	8-15	1.30-1.50	0.6-2.0	0.05-0.09	0.0-2.9	1.0-2.0	.10	.37			
	15-19	---	---	---	---	---	---	---	---			
373:												
Raisio	0-5	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	5-12	8-15	1.25-1.45	0.6-2.0	0.06-0.09	0.0-2.9	1.0-2.0	.15	.32			
	12-28	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	28-32	---	---	---	---	---	---	---	---			
Rufus	0-5	8-15	1.15-1.35	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.20	.37	1	6	48
	5-15	8-15	1.30-1.50	0.6-2.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.37			
	15-19	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
374:												
Raisio	0-11	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	11-24	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	24-28	---	---	---	---	---	---	---	---			
Rufus	0-12	8-15	1.15-1.35	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.20	.37	1	6	48
	12-16	8-15	1.30-1.50	0.6-2.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.37			
	16-20	---	---	---	---	---	---	---	---			
375:												
Raisio	0-11	8-15	1.25-1.45	0.6-2.0	0.09-0.14	0.0-2.9	2.0-3.0	.20	.32	2	6	48
	11-24	8-15	1.30-1.65	2.0-6.0	0.04-0.06	0.0-2.9	0.0-1.0	.05	.37			
	24-28	---	---	---	---	---	---	---	---			
Rufus	0-12	8-15	1.15-1.35	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.20	.37	1	6	48
	12-16	8-15	1.30-1.50	0.6-2.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.37			
	16-20	---	---	---	---	---	---	---	---			
376:												
Ralsen	0-11	5-15	1.35-1.45	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	11-42	5-15	1.45-1.55	0.6-2.0	0.15-0.20	0.0-2.9	2.0-3.0	.37	.43			
	42-60	2-10	1.50-1.60	2.0-6.0	0.05-0.13	0.0-2.9	1.0-2.0	.24	.32			
377:												
Ratlake	0-2	27-35	1.30-1.50	0.2-0.6	0.05-0.07	3.0-5.9	0.5-1.0	.49	.49	1	4L	86
	2-18	22-35	1.30-1.50	0.2-0.6	0.05-0.07	3.0-5.9	0.5-1.0	.49	.55			
	18-22	---	1.60-1.80	---	---	---	---	---	---			
378:												
Reardan	0-11	20-27	1.15-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	11-22	20-30	1.25-1.40	0.6-2.0	0.17-0.20	3.0-5.9	1.0-2.0	.43	.43			
	22-51	35-45	1.20-1.35	0.06-0.2	0.15-0.17	6.0-8.9	0.5-1.0	.24	.24			
	51-60	20-30	1.20-1.35	0.6-2.0	0.19-0.21	3.0-5.9	0.0-0.5	.43	.43			
379:												
Reardan	0-11	20-27	1.15-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	11-22	20-30	1.25-1.40	0.6-2.0	0.17-0.20	3.0-5.9	1.0-2.0	.43	.43			
	22-51	35-45	1.20-1.35	0.06-0.2	0.15-0.17	6.0-8.9	0.5-1.0	.24	.24			
	51-60	20-30	1.20-1.35	0.6-2.0	0.19-0.21	3.0-5.9	0.0-0.5	.43	.43			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
380:												
Rebecca	0-16	5-15	1.35-1.45	2.0-6.0	0.12-0.15	0.0-2.9	1.0-3.0	.32	.32	5	3	86
	16-36	5-15	1.40-1.50	2.0-6.0	0.07-0.12	0.0-2.9	0.5-1.0	.17	.32			
	36-60	2-15	1.40-1.50	2.0-6.0	0.07-0.10	0.0-2.9	0.0-0.5	.17	.32			
381:												
Rebecca	0-15	5-15	1.35-1.45	2.0-6.0	0.08-0.11	0.0-2.9	1.0-3.0	.20	.28	5	4	86
	15-45	5-15	1.40-1.50	2.0-6.0	0.07-0.12	0.0-2.9	0.5-1.0	.17	.32			
	45-60	2-15	1.40-1.50	2.0-6.0	0.07-0.10	0.0-2.9	0.0-0.5	.17	.32			
382:												
Renha	0-2	5-15	0.65-0.85	0.6-2.0	0.19-0.23	0.0-2.9	2.0-4.0	.43	.43	2	5	56
	2-7	5-15	0.75-0.95	0.6-2.0	0.18-0.22	0.0-2.9	1.0-2.0	.49	.49			
	7-11	15-25	1.55-1.65	0.6-2.0	0.17-0.21	3.0-5.9	1.0-2.0	.43	.49			
	11-28	35-50	1.50-1.60	0.2-0.6	0.14-0.20	6.0-8.9	0.5-1.0	.24	.28			
	28-32	---	---	---	---	---	---	---	---			
383:												
Renha	0-2	5-15	0.65-0.85	0.6-2.0	0.19-0.23	0.0-2.9	2.0-4.0	.43	.43	2	5	56
	2-7	5-15	0.75-0.95	0.6-2.0	0.18-0.22	0.0-2.9	1.0-2.0	.49	.49			
	7-11	15-25	1.55-1.65	0.6-2.0	0.17-0.21	3.0-5.9	1.0-2.0	.43	.49			
	11-28	35-50	1.50-1.60	0.2-0.6	0.14-0.20	6.0-8.9	0.5-1.0	.24	.28			
	28-32	---	---	---	---	---	---	---	---			
384:												
Renha	0-2	5-15	0.65-0.85	0.6-2.0	0.19-0.23	0.0-2.9	2.0-4.0	.43	.43	2	5	56
	2-7	5-15	0.75-0.95	0.6-2.0	0.18-0.22	0.0-2.9	1.0-2.0	.49	.49			
	7-11	15-25	1.55-1.65	0.6-2.0	0.17-0.21	3.0-5.9	1.0-2.0	.43	.49			
	11-28	35-50	1.50-1.60	0.2-0.6	0.14-0.20	6.0-8.9	0.5-1.0	.24	.28			
	28-32	---	---	---	---	---	---	---	---			
Oxerine	0-2	5-15	0.75-0.85	0.6-2.0	0.19-0.23	0.0-2.9	2.0-4.0	.43	.43	2	5	56
	2-9	8-15	0.85-0.95	0.6-2.0	0.18-0.22	0.0-2.9	1.0-3.0	.49	.49			
	9-14	10-15	1.40-1.50	0.6-2.0	0.15-0.19	0.0-2.9	0.5-1.0	.37	.49			
	14-24	10-15	1.45-1.55	2.0-6.0	0.06-0.10	0.0-2.9	0.5-1.0	.15	.43			
	24-27	5-15	1.55-1.65	2.0-6.0	0.03-0.08	0.0-2.9	0.0-0.5	.10	.28			
	27-31	---	---	---	---	---	---	---	---			
385:												
Republic	0-5	10-15	1.15-1.35	0.6-2.0	0.15-0.19	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	5-11	10-15	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.37			
	11-38	8-15	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.5-1.0	.20	.37			
	38-60	5-10	1.30-1.50	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.15	.37			
386:												
Republic	0-5	10-15	1.15-1.35	0.6-2.0	0.15-0.19	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	5-11	10-15	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.37			
	11-38	8-15	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.5-1.0	.20	.37			
	38-60	5-10	1.30-1.50	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.15	.37			
387:												
Republic	0-5	10-15	1.15-1.35	0.6-2.0	0.15-0.19	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	5-11	10-15	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.37			
	11-38	8-15	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.5-1.0	.20	.37			
	38-60	5-10	1.30-1.50	2.0-6.0	0.07-0.11	0.0-2.9	0.5-1.0	.15	.37			
388:												
Resner	0-5	10-18	0.65-0.85	0.6-2.0	0.21-0.24	0.0-2.9	2.0-5.0	.37	.43	2	2	134
	5-17	5-18	0.65-0.85	0.6-2.0	0.19-0.22	0.0-2.9	1.0-2.0	.43	.43			
	17-60	1-5	1.70-1.90	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5	.02	.20			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
389:												
Resner	0-5	10-18	0.65-0.85	0.6-2.0	0.21-0.24	0.0-2.9	2.0-5.0	.37	.43	2	2	134
	5-17	5-18	0.65-0.85	0.6-2.0	0.19-0.22	0.0-2.9	1.0-2.0	.43	.43			
	17-60	1-5	1.70-1.90	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5	.02	.20			
390:												
Ret	0-8	10-15	1.15-1.35	0.6-2.0	0.17-0.21	0.0-2.9	1.0-4.0	.43	.43	3	5	56
	8-22	8-17	1.30-1.40	0.6-6.0	0.15-0.21	0.0-2.9	1.0-2.0	.37	.37			
	22-30	6-17	1.30-1.55	0.6-6.0	0.10-0.21	0.0-2.9	0.5-1.0	.32	.37			
	30-60	0-10	1.45-1.65	6.0-20.0	0.03-0.15	0.0-2.9	0.0-0.5	.15	.37			
391:												
Riverwash	0-60	---	---	---	---	---	---	---	---	---	---	---
392:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
393:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Chumstick	0-5	3-8	1.10-1.35	0.6-2.0	0.08-0.11	0.0-2.9	2.0-3.0	.15	.32	1	8	0
	5-12	3-8	1.20-1.40	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32			
	12-16	---	---	---	---	---	---	---	---			
394:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Chumstick	0-5	3-8	1.10-1.35	0.6-2.0	0.08-0.11	0.0-2.9	2.0-3.0	.15	.32	1	8	0
	5-12	3-8	1.20-1.40	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32			
	12-16	---	---	---	---	---	---	---	---			
395:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Mineral	0-6	10-15	1.00-1.20	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.15	.28	2	6	48
	6-12	7-15	1.20-1.30	0.6-2.0	0.06-0.12	0.0-2.9	1.0-2.0	.15	.28			
	12-23	5-12	1.30-1.50	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.32			
	23-27	---	---	---	---	---	---	---	---			
396:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Rufus	0-5	8-15	1.15-1.35	0.6-2.0	0.09-0.12	0.0-2.9	1.0-2.0	.20	.37	1	6	48
	5-15	8-15	1.30-1.50	0.6-2.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.37			
	15-19	---	---	---	---	---	---	---	---			
397:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Soaplake	0-10	7-15	1.30-1.50	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.49	.49	1	5	56
	10-17	5-15	1.40-1.60	0.6-6.0	0.10-0.16	0.0-2.9	0.0-1.0	.28	.32			
	17-21	---	---	---	---	---	---	---	---			
398:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Swakane	0-7	7-15	1.35-1.45	0.6-2.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.32	1	7	38
	7-11	5-15	1.45-1.55	0.6-2.0	0.05-0.10	0.0-2.9	1.0-2.0	.10	.32			
	11-14	5-15	1.45-1.55	2.0-6.0	0.04-0.09	0.0-2.9	0.5-1.0	.10	.32			
	14-18	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
399:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Vanbrunt	0-3	5-16	1.30-1.40	2.0-6.0	0.09-0.11	0.0-2.9	2.0-3.0	.17	.24	2	5	56
	3-10	5-12	1.30-1.40	2.0-6.0	0.08-0.11	0.0-2.9	1.0-2.0	.15	.24			
	10-25	3-8	1.50-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			
	25-29	---	---	---	---	---	---	---	---			
400:												
Roosevelt	0-14	7-15	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32	2	6	48
	14-28	5-15	1.40-1.60	2.0-6.0	0.09-0.14	0.0-2.9	0.0-0.5	.24	.28			
	28-32	---	---	---	---	---	---	---	---			
Soaplake	0-10	7-15	1.30-1.50	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.49	.49	1	5	56
	10-17	5-15	1.40-1.60	0.6-6.0	0.10-0.16	0.0-2.9	0.0-1.0	.28	.32			
	17-21	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
401:												
Roosevelt	0-14	7-15	1.30-1.50	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.32	2	6	48
	14-28	5-15	1.40-1.60	2.0-6.0	0.09-0.14	0.0-2.9	0.0-0.5	.24	.28			
	28-32	---	---	---	---	---	---	---	---			
Soaplake	0-10	7-15	1.30-1.50	0.6-2.0	0.15-0.17	0.0-2.9	1.0-2.0	.49	.49	1	5	56
	10-17	5-15	1.40-1.60	0.6-6.0	0.10-0.16	0.0-2.9	0.0-1.0	.28	.32			
	17-21	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
402:												
Rubble land	0-60	---	---	---	---	---	---	---	---	---	---	---
403:												
Rubble land	0-60	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
404:												
Rubble land	0-60	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
Haploxerolls	0-16	5-15	1.35-1.45	0.6-2.0	0.10-0.13	0.0-2.9	1.0-3.0	.15	.49	5	7	38
	16-60	0-0	1.45-1.55	0.6-20.0	0.01-0.11	0.0-2.9	0.0-1.0	.10	.20			
405:												
Sacheen	0-8	3-8	1.35-1.55	6.0-20.0	0.06-0.09	0.0-2.9	1.0-2.0	.28	.28	5	2	134
	8-25	3-8	1.40-1.60	6.0-20.0	0.06-0.10	0.0-2.9	0.5-1.0	.28	.28			
	25-60	3-8	1.40-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.20			
406:												
Sacheen	0-8	3-8	1.35-1.55	6.0-20.0	0.06-0.09	0.0-2.9	1.0-2.0	.28	.28	5	2	134
	8-25	3-8	1.40-1.60	6.0-20.0	0.06-0.10	0.0-2.9	0.5-1.0	.28	.28			
	25-60	3-8	1.40-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.20			
407:												
Sacheen	0-4	3-8	1.30-1.50	6.0-20.0	0.08-0.11	0.0-2.9	1.0-2.0	.32	.32	5	2	134
	4-20	3-8	1.40-1.60	6.0-20.0	0.06-0.10	0.0-2.9	0.5-1.0	.28	.28			
	20-60	3-8	1.40-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.20			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
408:												
Sanpoil	0-12	10-18	1.20-1.30	0.6-2.0	0.17-0.21	0.0-2.9	3.0-4.0	.37	.37	4	5	56
	12-28	10-18	1.30-1.40	0.6-2.0	0.15-0.20	0.0-2.9	2.0-3.0	.37	.43			
	28-41	5-15	1.35-1.55	0.6-2.0	0.11-0.19	0.0-2.9	1.0-2.0	.32	.43			
	41-60	1-5	1.50-1.65	2.0-20.0	0.03-0.12	0.0-2.9	0.5-1.0	.10	.20			
409:												
Sanpoil	0-20	10-18	1.20-1.30	0.6-2.0	0.17-0.21	0.0-2.9	3.0-4.0	.37	.43	4	5	56
	20-28	10-18	1.30-1.40	0.6-2.0	0.15-0.20	0.0-2.9	2.0-3.0	.37	.43			
	28-45	5-15	1.35-1.55	0.6-2.0	0.11-0.19	0.0-2.9	1.0-2.0	.32	.43			
	45-60	1-5	1.50-1.65	2.0-20.0	0.03-0.12	0.0-2.9	0.5-1.0	.10	.20			
410:												
Scala	0-6	5-10	1.30-1.40	2.0-6.0	0.15-0.17	0.0-2.9	0.5-1.0	.49	.49	5	3	86
	6-28	5-10	1.50-1.60	2.0-6.0	0.13-0.17	0.0-2.9	0.0-0.5	.43	.43			
	28-60	5-10	1.50-1.60	2.0-6.0	0.13-0.17	0.0-2.9	0.0-0.5	.43	.43			
411:												
Sclome	0-13	27-40	1.15-1.25	0.2-0.6	0.20-0.24	6.0-8.9	3.0-5.0	.20	.20	5	7	38
	13-18	18-27	1.25-1.35	0.2-0.6	0.20-0.22	3.0-5.9	2.0-3.0	.43	.43			
	18-28	27-34	1.45-1.55	0.2-0.6	0.19-0.21	3.0-5.9	2.0-3.0	.32	.32			
	28-50	18-30	1.40-1.50	0.2-0.6	0.16-0.18	3.0-5.9	1.0-2.0	.37	.37			
	50-60	10-30	1.50-1.60	0.2-0.6	0.12-0.18	3.0-5.9	0.5-1.0	.37	.37			
412:												
Scoap	0-3	8-12	1.20-1.40	0.6-2.0	0.17-0.19	0.0-2.9	3.0-4.0	.37	.37	5	5	56
	3-12	8-12	1.30-1.50	0.6-2.0	0.10-0.13	0.0-2.9	2.0-3.0	.20	.32			
	12-60	8-12	1.30-1.50	0.6-2.0	0.09-0.12	0.0-2.9	2.0-3.0	.10	.32			
413:												
Scoap	0-14	8-12	1.20-1.40	0.6-2.0	0.12-0.15	0.0-2.9	3.0-4.0	.24	.28	5	6	48
	14-22	8-12	1.30-1.50	0.6-2.0	0.10-0.13	0.0-2.9	2.0-3.0	.20	.32			
	22-36	8-12	1.30-1.50	0.6-2.0	0.09-0.12	0.0-2.9	2.0-3.0	.10	.32			
	36-60	8-12	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0	.10	.37			
414:												
Scoap	0-14	8-12	1.20-1.40	0.6-2.0	0.12-0.15	0.0-2.9	3.0-4.0	.24	.28	5	6	48
	14-22	8-12	1.30-1.50	0.6-2.0	0.10-0.13	0.0-2.9	2.0-3.0	.20	.32			
	22-36	8-12	1.30-1.50	0.6-2.0	0.09-0.12	0.0-2.9	2.0-3.0	.10	.32			
	36-60	8-12	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0	.10	.37			
415:												
Scoap	0-14	8-12	1.20-1.40	0.6-2.0	0.12-0.15	0.0-2.9	3.0-4.0	.24	.28	5	6	48
	14-22	8-12	1.30-1.50	0.6-2.0	0.10-0.13	0.0-2.9	2.0-3.0	.20	.32			
	22-36	8-12	1.30-1.50	0.6-2.0	0.09-0.12	0.0-2.9	2.0-3.0	.10	.32			
	36-60	8-12	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0	.10	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
416:												
Scoap	0-14	8-12	1.20-1.40	0.6-2.0	0.12-0.15	0.0-2.9	3.0-4.0	.24	.28	5	6	48
	14-22	8-12	1.30-1.50	0.6-2.0	0.10-0.13	0.0-2.9	2.0-3.0	.20	.32			
	22-36	8-12	1.30-1.50	0.6-2.0	0.09-0.12	0.0-2.9	2.0-3.0	.10	.32			
	36-60	8-12	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0	.10	.37			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
417:												
Scrabblers	0-3	5-15	0.75-0.85	0.6-2.0	0.18-0.20	0.0-2.9	2.0-4.0	.37	.37	2	5	56
	3-11	5-18	0.75-0.85	0.6-2.0	0.13-0.18	0.0-2.9	1.0-2.0	.28	.43			
	11-24	2-8	1.55-1.65	2.0-6.0	0.04-0.10	0.0-2.9	0.0-0.5	.10	.28			
	24-60	2-5	1.60-1.70	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.05	.17			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
418:												
Scrabblers	0-3	5-15	0.75-0.85	0.6-2.0	0.18-0.20	0.0-2.9	2.0-4.0	.37	.37	2	5	56
	3-11	5-18	0.75-0.85	0.6-2.0	0.13-0.18	0.0-2.9	1.0-2.0	.28	.43			
	11-24	2-8	1.55-1.65	2.0-6.0	0.04-0.10	0.0-2.9	0.0-0.5	.10	.28			
	24-60	2-5	1.60-1.70	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.05	.17			
419:												
Scrabblers	0-5	10-18	0.75-0.85	0.6-2.0	0.15-0.18	0.0-2.9	2.0-4.0	.43	.43	2	5	56
	5-13	5-18	0.75-0.85	0.6-2.0	0.13-0.18	0.0-2.9	1.0-2.0	.28	.43			
	13-20	2-8	1.55-1.65	2.0-6.0	0.04-0.10	0.0-2.9	0.0-0.5	.10	.28			
	20-60	2-5	1.60-1.70	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.05	.20			
420:												
Scrabblers	0-5	10-18	0.75-0.85	0.6-2.0	0.15-0.18	0.0-2.9	2.0-4.0	.43	.43	2	5	56
	5-13	5-18	0.75-0.85	0.6-2.0	0.13-0.18	0.0-2.9	1.0-2.0	.28	.43			
	13-20	2-8	1.55-1.65	2.0-6.0	0.04-0.10	0.0-2.9	0.0-0.5	.10	.28			
	20-60	2-5	1.60-1.70	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.05	.20			
421:												
Sitdown	0-13	10-18	0.75-0.85	0.6-2.0	0.12-0.15	0.0-2.9	2.0-4.0	.28	.28	2	2	134
	13-60	0-5	1.40-1.60	20.0-100.0	0.01-0.05	0.0-2.9	0.0-1.0	.02	.17			
422:												
Skaha	0-7	0-5	1.55-1.65	6.0-20.0	0.06-0.08	0.0-2.9	0.5-1.0	.20	.20	5	2	134
	7-35	0-5	1.55-1.65	6.0-20.0	0.04-0.07	0.0-2.9	0.0-0.5	.10	.20			
	35-60	0-5	1.45-1.55	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.17			
423:												
Skaha	0-8	0-5	1.55-1.65	6.0-20.0	0.05-0.07	0.0-2.9	0.5-1.0	.10	.20	5	2	134
	8-18	0-5	1.45-1.55	6.0-20.0	0.03-0.06	0.0-2.9	0.0-0.5	.05	.24			
	18-60	0-5	1.45-1.55	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
424:												
Skaha	0-10	0-5	1.55-1.65	6.0-20.0	0.03-0.05	0.0-2.9	0.5-1.0	.05	.20	5	5	56
	10-18	0-5	1.45-1.55	6.0-20.0	0.03-0.06	0.0-2.9	0.0-0.5	.05	.24			
	18-60	0-5	1.45-1.55	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
425:												
Skaha	0-7	0-5	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32	5	5	56
	7-60	0-3	1.40-1.60	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.20			
426:												
Skaha	0-7	0-5	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32	5	5	56
	7-60	0-3	1.40-1.60	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.20			
427:												
Skaha	0-7	0-5	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32	5	5	56
	7-60	0-3	1.40-1.60	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.20			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
428:												
Skanid	0-9	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	9-14	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	14-24	---	---	---	---	---	---	---	---			
429:												
Skanid	0-9	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	9-14	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	14-24	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
430:												
Skanid	0-9	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	9-14	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	14-24	---	---	---	---	---	---	---	---			
431:												
Skanid	0-5	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	5-11	5-10	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-18	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	18-28	---	---	---	---	---	---	---	---			
432:												
Skanid	0-5	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	5-11	5-10	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-18	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	18-28	---	---	---	---	---	---	---	---			
433:												
Skanid	0-5	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	5-11	5-10	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-18	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	18-28	---	---	---	---	---	---	---	---			
434:												
Skanid	0-9	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	9-14	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	14-24	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
435:												
Skanid	0-9	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	9-14	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	14-24	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
436:												
Skanid	0-5	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	5-11	5-10	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-18	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	18-28	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
437:												
Spens	0-3	2-5	1.40-1.45	6.0-20.0	0.04-0.06	0.0-2.9	1.0-2.0	.05	.17	5	5	56
	3-15	0-5	1.55-1.65	6.0-20.0	0.05-0.07	0.0-2.9	0.5-1.0	.10	.20			
	15-60	0-4	1.45-1.60	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.17			
438:												
Spens	0-3	2-5	1.40-1.45	6.0-20.0	0.04-0.06	0.0-2.9	1.0-2.0	.05	.17	5	5	56
	3-15	0-5	1.55-1.65	6.0-20.0	0.05-0.07	0.0-2.9	0.5-1.0	.10	.20			
	15-60	0-4	1.45-1.60	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.17			
439:												
Spokane	0-10	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	10-25	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	25-35	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
440:												
Spokane	0-10	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	10-25	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	25-35	---	---	---	---	---	---	---	---			
441:												
Spokane	0-10	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	10-25	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	25-35	---	---	---	---	---	---	---	---			
442:												
Spokane	0-9	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	9-22	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	22-33	2-8	1.50-1.80	2.0-6.0	0.05-0.10	0.0-2.9	0.5-1.0	.10	.28			
	33-43	---	---	---	---	---	---	---	---			
443:												
Spokane	0-9	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	9-22	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	22-33	2-8	1.50-1.80	2.0-6.0	0.05-0.10	0.0-2.9	0.5-1.0	.10	.28			
	33-43	---	---	---	---	---	---	---	---			
444:												
Spokane	0-10	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	10-25	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	25-35	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
445:												
Spokane	0-10	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	10-25	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	25-35	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
446:												
Spokane	0-9	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	9-22	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	22-33	2-8	1.50-1.80	2.0-6.0	0.05-0.10	0.0-2.9	0.5-1.0	.10	.28			
	33-43	---	---	---	---	---	---	---	---			
Skanid	0-5	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	5-11	5-10	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-18	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	18-28	---	---	---	---	---	---	---	---			
447:												
Spokane	0-9	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	9-22	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	22-33	2-8	1.50-1.80	2.0-6.0	0.05-0.10	0.0-2.9	0.5-1.0	.10	.28			
	33-43	---	---	---	---	---	---	---	---			
Skanid	0-5	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	5-11	5-10	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-18	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	18-28	---	---	---	---	---	---	---	---			
448:												
Spokane	0-9	8-15	1.15-1.35	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.28	.32	3	5	56
	9-22	5-15	1.45-1.75	2.0-6.0	0.07-0.11	0.0-2.9	1.0-2.0	.15	.28			
	22-33	2-8	1.50-1.80	2.0-6.0	0.05-0.10	0.0-2.9	0.5-1.0	.10	.28			
	33-43	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
448:												
Skanid	0-5	7-12	1.25-1.35	2.0-6.0	0.09-0.13	0.0-2.9	2.0-5.0	.15	.28	2	4	86
	5-11	5-10	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	1.0-2.0	.15	.32			
	11-18	5-8	1.60-1.70	2.0-6.0	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
	18-28	---	---	---	---	---	---	---	---			
449:												
Springdale	0-4	4-8	1.25-1.45	2.0-6.0	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	2	4	86
	4-11	4-8	1.20-1.40	2.0-6.0	0.09-0.11	0.0-2.9	0.5-1.0	.15	.32			
	11-17	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
	17-60	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
450:												
Springdale	0-4	4-8	1.25-1.45	2.0-6.0	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	2	4	86
	4-11	4-8	1.20-1.40	2.0-6.0	0.09-0.11	0.0-2.9	0.5-1.0	.15	.32			
	11-17	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
	17-60	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
451:												
Springdale	0-4	4-8	1.25-1.45	2.0-6.0	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	2	4	86
	4-11	4-8	1.20-1.40	2.0-6.0	0.09-0.11	0.0-2.9	0.5-1.0	.15	.32			
	11-17	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
	17-60	0-5	1.35-1.50	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24			
452:												
Stapaloop	0-7	2-8	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	7-22	2-8	1.30-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.5-1.0	.32	.37			
	22-31	2-8	1.35-1.50	2.0-6.0	0.09-0.13	0.0-2.9	0.0-0.5	.28	.37			
	31-60	2-8	1.40-1.55	2.0-6.0	0.08-0.12	0.0-2.9	0.0-0.5	.24	.37			
453:												
Stapaloop	0-7	2-8	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	7-22	2-8	1.30-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.5-1.0	.32	.37			
	22-31	2-8	1.35-1.50	2.0-6.0	0.09-0.13	0.0-2.9	0.0-0.5	.28	.37			
	31-60	2-8	1.40-1.55	2.0-6.0	0.08-0.12	0.0-2.9	0.0-0.5	.24	.37			
454:												
Stapaloop	0-2	2-8	1.20-1.40	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.32	.32	5	3	86
	2-17	2-8	1.30-1.45	2.0-6.0	0.10-0.14	0.0-2.9	0.5-1.0	.32	.37			
	17-38	2-8	1.35-1.50	2.0-6.0	0.09-0.13	0.0-2.9	0.0-0.5	.28	.37			
	38-60	2-8	1.40-1.55	2.0-6.0	0.08-0.12	0.0-2.9	0.0-0.5	.24	.37			
455:												
Stepstone	0-6	10-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.43	3	2	134
	6-18	5-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.43			
	18-22	5-18	0.65-0.85	2.0-6.0	0.10-0.13	0.0-2.9	0.5-1.0	.17	.43			
	22-60	3-8	1.50-1.70	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.05	.28			
456:												
Stepstone	0-6	10-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.43	3	2	134
	6-18	5-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.43			
	18-22	5-18	0.65-0.85	2.0-6.0	0.10-0.13	0.0-2.9	0.5-1.0	.17	.43			
	22-60	3-8	1.50-1.70	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.05	.28			
457:												
Stepstone	0-6	10-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.43	3	2	134
	6-18	5-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.37	.43			
	18-22	5-18	0.65-0.85	2.0-6.0	0.10-0.13	0.0-2.9	0.5-1.0	.17	.43			
	22-60	3-8	1.50-1.70	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.05	.28			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
458:												
Stepstone	0-9	10-18	0.65-0.85	0.6-2.0	0.19-0.21	0.0-2.9	1.0-2.0	.32	.37	3	2	134
	9-29	5-18	0.65-0.85	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.37			
	29-60	3-8	1.50-1.70	20.0-100.0	0.05-0.08	0.0-2.9	0.0-0.5	.05	.24			
459:												
Stevens	0-22	10-18	1.15-1.35	2.0-6.0	0.19-0.21	0.0-2.9	3.0-4.0	.37	.37	3	5	56
	22-38	10-18	1.30-1.45	2.0-6.0	0.12-0.18	0.0-2.9	1.0-2.0	.24	.37			
	38-60	10-18	1.70-2.00	0.06-0.2	0.15-0.17	0.0-2.9	0.0-1.0	.17	.37			
460:												
Stevens	0-22	10-18	1.15-1.35	2.0-6.0	0.19-0.21	0.0-2.9	3.0-4.0	.37	.37	3	5	56
	22-38	10-18	1.30-1.45	2.0-6.0	0.12-0.18	0.0-2.9	1.0-2.0	.24	.37			
	38-60	10-18	1.70-2.00	0.06-0.2	0.15-0.17	0.0-2.9	0.0-1.0	.17	.37			
461:												
Stevens	0-22	10-18	1.15-1.35	2.0-6.0	0.19-0.21	0.0-2.9	3.0-4.0	.37	.37	3	5	56
	22-38	10-18	1.30-1.45	2.0-6.0	0.12-0.18	0.0-2.9	1.0-2.0	.24	.37			
	38-60	10-18	1.70-2.00	0.06-0.2	0.15-0.17	0.0-2.9	0.0-1.0	.17	.37			
462:												
Stevens	0-15	10-18	1.15-1.35	2.0-6.0	0.15-0.18	0.0-2.9	3.0-4.0	.24	.37	3	6	48
	15-31	10-18	1.30-1.45	2.0-6.0	0.12-0.18	0.0-2.9	1.0-2.0	.24	.37			
	31-60	10-18	1.70-2.00	0.06-0.2	0.15-0.17	0.0-2.9	0.0-1.0	.17	.37			
463:												
Strat	0-11	8-15	1.35-1.45	2.0-6.0	0.10-0.14	0.0-2.9	1.0-2.0	.20	.37	3	4	86
	11-24	8-15	1.40-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.5-1.0	.15	.49			
	24-60	1-3	1.50-1.65	20.0-100.0	0.01-0.04	0.0-2.9	0.0-0.5	.10	.20			
464:												
Stubblefield	0-9	8-12	1.30-1.50	0.6-2.0	0.14-0.16	0.0-2.9	1.0-2.0	.32	.32	3	6	48
	9-24	5-12	1.40-1.60	0.6-2.0	0.07-0.13	0.0-2.9	0.0-1.0	.15	.32			
	24-28	---	1.45-1.70	---	---	---	---	---	---			
	28-60	7-18	1.50-1.75	0.06-0.2	0.00-0.00	0.0-2.9	0.0-0.5	.20	.37			
465:												
Swakane	0-6	7-15	1.35-1.45	0.6-2.0	0.12-0.14	0.0-2.9	1.0-3.0	.20	.32	1	6	48
	6-11	5-15	1.45-1.55	0.6-2.0	0.05-0.10	0.0-2.9	1.0-2.0	.10	.32			
	11-14	5-15	1.45-1.55	2.0-6.0	0.04-0.09	0.0-2.9	0.5-1.0	.10	.32			
	14-18	---	---	---	---	---	---	---	---			
466:												
Swakane	0-7	7-15	1.35-1.45	0.6-2.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.32	1	7	38
	7-11	5-15	1.45-1.55	0.6-2.0	0.05-0.10	0.0-2.9	1.0-2.0	.10	.32			
	11-14	5-15	1.45-1.55	2.0-6.0	0.04-0.09	0.0-2.9	0.5-1.0	.10	.32			
	14-18	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
467:												
Swakane	0-7	7-15	1.35-1.45	0.6-2.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.32	1	7	38
	7-11	5-15	1.45-1.55	0.6-2.0	0.05-0.10	0.0-2.9	1.0-2.0	.10	.32			
	11-14	5-15	1.45-1.55	2.0-6.0	0.04-0.09	0.0-2.9	0.5-1.0	.10	.32			
	14-18	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
468:												
Swipkin	0-16	10-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	16-21	10-18	1.30-1.40	0.6-2.0	0.17-0.20	0.0-2.9	1.0-2.0	.49	.49			
	21-44	10-18	1.40-1.50	0.6-2.0	0.17-0.20	0.0-2.9	0.5-1.0	.49	.55			
	44-60	10-27	1.40-1.50	0.2-0.6	0.17-0.20	0.0-2.9	0.0-0.5	.43	.55			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
469:												
Swipkin	0-16	10-18	1.20-1.30	0.6-2.0	0.19-0.21	0.0-2.9	2.0-3.0	.43	.43	5	5	56
	16-21	10-18	1.30-1.40	0.6-2.0	0.17-0.20	0.0-2.9	1.0-2.0	.49	.49			
	21-44	10-18	1.40-1.50	0.6-2.0	0.17-0.20	0.0-2.9	0.5-1.0	.49	.55			
	44-60	10-27	1.40-1.50	0.2-0.6	0.17-0.20	0.0-2.9	0.0-0.5	.43	.55			
470:												
Thout	0-4	8-14	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.28	2	6	48
	4-18	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	1.0-2.0	.20	.32			
	18-26	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.5-1.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			
471:												
Thout	0-4	8-14	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.28	2	6	48
	4-18	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	1.0-2.0	.20	.32			
	18-26	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.5-1.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
472:												
Thout	0-4	8-14	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.28	2	6	48
	4-18	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	1.0-2.0	.20	.32			
	18-26	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.5-1.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
473:												
Thout	0-4	8-14	1.20-1.40	0.6-2.0	0.11-0.14	0.0-2.9	1.0-2.0	.24	.28	2	6	48
	4-18	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	1.0-2.0	.20	.32			
	18-26	8-14	1.30-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.5-1.0	.15	.32			
	26-30	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
474:												
Timentwa	0-18	10-18	1.10-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0	.43	.43	4	2	134
	18-41	5-18	1.10-1.40	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.28	.43			
	41-56	3-10	1.45-1.65	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.17	.43			
	56-60	---	1.50-1.70	---	---	---	---	---	---			
475:												
Timentwa	0-18	10-18	1.10-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0	.43	.43	4	2	134
	18-41	5-18	1.10-1.40	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.28	.43			
	41-56	3-10	1.45-1.65	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.17	.43			
	56-60	---	1.50-1.70	---	---	---	---	---	---			
476:												
Timentwa	0-12	10-18	1.20-1.35	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.28	.32	4	4	86
	12-20	5-18	1.25-1.40	0.6-2.0	0.10-0.15	0.0-2.9	1.0-2.0	.28	.37			
	20-37	3-10	1.50-1.70	0.6-2.0	0.08-0.14	0.0-2.9	1.0-2.0	.20	.37			
	37-52	2-10	1.50-1.70	0.6-2.0	0.07-0.12	0.0-2.9	0.5-1.0	.17	.37			
	52-60	---	1.50-1.75	---	---	---	---	---	---			
477:												
Timentwa	0-18	10-18	1.10-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0	.43	.43	4	2	134
	18-41	5-18	1.10-1.40	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.28	.43			
	41-56	3-10	1.45-1.65	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.17	.43			
	56-60	---	1.50-1.70	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
477:												
Timentwa	0-20	10-18	1.10-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0	.43	.43	4	2	134
	20-37	5-18	1.10-1.40	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.28	.43			
	37-42	3-10	1.45-1.65	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.17	.43			
	42-60	---	1.50-1.70	---	---	---	---	---	---			
478:												
Timentwa	0-8	10-18	1.20-1.35	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.28	.32	4	4	86
	8-20	5-18	1.25-1.40	0.6-2.0	0.10-0.15	0.0-2.9	1.0-2.0	.28	.37			
	20-37	3-10	1.50-1.70	0.6-2.0	0.08-0.14	0.0-2.9	1.0-2.0	.20	.37			
	37-52	2-10	1.50-1.70	0.6-2.0	0.07-0.12	0.0-2.9	0.5-1.0	.17	.37			
	52-60	---	1.50-1.75	---	---	---	---	---	---			
Timentwa	0-4	10-18	1.20-1.35	0.6-2.0	0.12-0.16	0.0-2.9	2.0-4.0	.28	.32	4	4	86
	4-36	5-18	1.25-1.40	0.6-2.0	0.10-0.15	0.0-2.9	1.0-2.0	.28	.37			
	36-42	3-10	1.50-1.70	0.6-2.0	0.08-0.14	0.0-2.9	1.0-2.0	.20	.37			
	42-56	2-10	1.50-1.70	0.6-2.0	0.07-0.12	0.0-2.9	0.5-1.0	.17	.37			
	56-60	---	1.50-1.75	---	---	---	---	---	---			
479:												
Timentwa	0-18	10-18	1.10-1.40	0.6-2.0	0.14-0.16	0.0-2.9	1.0-4.0	.43	.43	4	2	134
	18-41	5-18	1.10-1.40	0.6-2.0	0.12-0.15	0.0-2.9	1.0-2.0	.28	.43			
	41-56	3-10	1.45-1.65	0.6-2.0	0.10-0.13	0.0-2.9	0.0-1.0	.17	.43			
	56-60	---	1.50-1.70	---	---	---	---	---	---			
Bakeoven	0-3	15-25	1.25-1.35	0.6-2.0	0.12-0.16	0.0-2.9	1.0-3.0	.10	.37	1	8	0
	3-7	15-25	1.35-1.45	0.6-2.0	0.08-0.15	0.0-2.9	1.0-2.0	.10	.32			
	7-11	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
480:												
Togo	0-4	5-15	0.75-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	5	2	134
	4-15	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.24	.32			
	15-28	5-15	1.55-1.65	2.0-6.0	0.07-0.10	0.0-2.9	0.5-1.0	.10	.32			
	28-60	5-15	1.55-1.65	2.0-6.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
481:												
Togo	0-4	5-15	0.75-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	5	2	134
	4-15	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.24	.32			
	15-28	5-15	1.55-1.65	2.0-6.0	0.07-0.10	0.0-2.9	0.5-1.0	.10	.32			
	28-60	5-15	1.55-1.65	2.0-6.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
482:												
Togo	0-4	5-15	0.75-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	5	2	134
	4-15	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.24	.32			
	15-28	5-15	1.55-1.65	2.0-6.0	0.07-0.10	0.0-2.9	0.5-1.0	.10	.32			
	28-60	5-15	1.55-1.65	2.0-6.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
483:												
Togo	0-5	5-15	0.75-0.85	0.6-2.0	0.16-0.21	0.0-2.9	2.0-4.0	.32	.32	5	2	134
	5-16	5-18	0.75-0.85	0.6-2.0	0.14-0.21	0.0-2.9	1.0-2.0	.24	.32			
	16-29	5-15	1.55-1.65	2.0-6.0	0.07-0.10	0.0-2.9	0.5-1.0	.10	.32			
	29-60	5-15	1.55-1.65	2.0-6.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
484:												
Togo	0-6	5-15	0.85-0.95	0.6-2.0	0.14-0.18	0.0-2.9	2.0-4.0	.15	.32	5	4	86
	6-16	5-18	0.85-0.95	0.6-2.0	0.12-0.18	0.0-2.9	1.0-2.0	.15	.37			
	16-30	5-15	1.55-1.65	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.32			
	30-60	5-15	1.55-1.65	2.0-6.0	0.05-0.07	0.0-2.9	0.0-0.5	.05	.32			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
484:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
485:												
Torboy	0-4	5-10	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.24	2	3	86
	4-16	5-12	1.25-1.45	2.0-6.0	0.11-0.13	0.0-2.9	0.5-1.0	.15	.28			
	16-33	0-10	1.40-1.60	6.0-20.0	0.05-0.07	0.0-2.9	0.5-1.0	.10	.20			
	33-60	0-8	1.40-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.28			
486:												
Torboy	0-4	5-10	1.20-1.40	2.0-6.0	0.12-0.15	0.0-2.9	1.0-2.0	.24	.24	2	3	86
	4-16	5-12	1.25-1.45	2.0-6.0	0.11-0.13	0.0-2.9	0.5-1.0	.15	.28			
	16-33	0-10	1.40-1.60	6.0-20.0	0.05-0.07	0.0-2.9	0.5-1.0	.10	.20			
	33-60	0-8	1.40-1.60	20.0-100.0	0.04-0.06	0.0-2.9	0.0-0.5	.10	.28			
487:												
Torrifluventic Haploxerolls	0-11	3-8	1.35-1.50	6.0-20.0	0.07-0.11	0.0-2.9	1.0-2.0	.17	.20	5	2	134
	11-60	2-10	1.45-1.65	6.0-20.0	0.04-0.12	0.0-2.9	0.5-1.0	.24	.49			
488:												
Tunkcreek	0-7	8-12	0.85-0.95	2.0-6.0	0.17-0.19	0.0-2.9	2.0-4.0	.24	.24	2	2	134
	7-16	8-12	0.85-0.95	2.0-6.0	0.15-0.18	0.0-2.9	1.0-2.0	.24	.24			
	16-31	1-5	1.50-1.60	6.0-20.0	0.05-0.08	0.0-2.9	0.5-1.0	.15	.20			
	31-60	1-5	1.55-1.65	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.10	.20			
489:												
Tunkcreek	0-7	8-12	0.85-0.95	2.0-6.0	0.17-0.19	0.0-2.9	2.0-4.0	.24	.24	2	2	134
	7-16	8-12	0.85-0.95	2.0-6.0	0.15-0.18	0.0-2.9	1.0-2.0	.24	.24			
	16-31	1-5	1.50-1.60	6.0-20.0	0.05-0.08	0.0-2.9	0.5-1.0	.15	.20			
	31-60	1-5	1.55-1.65	20.0-100.0	0.03-0.06	0.0-2.9	0.0-0.5	.10	.20			
490:												
Tyee	0-11	8-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.20	.32	2	2	134
	11-17	3-5	1.35-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.15	.37			
	17-27	---	---	---	---	---	---	---	---			
491:												
Tyee	0-13	8-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.20	.32	2	2	134
	13-16	3-5	1.35-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.15	.37			
	16-26	---	---	---	---	---	---	---	---			
492:												
Tyee	0-11	8-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.20	.32	2	2	134
	11-17	3-10	1.35-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.15	.37			
	17-27	---	---	---	---	---	---	---	---			
493:												
Tyee	0-11	8-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.20	.32	2	2	134
	11-17	3-10	1.35-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.15	.37			
	17-27	---	---	---	---	---	---	---	---			
Morical	0-17	5-15	1.00-1.30	0.6-2.0	0.15-0.20	0.0-2.9	2.0-4.0	.37	.37	3	2	134
	17-33	18-27	1.35-1.50	0.6-2.0	0.14-0.19	3.0-5.9	0.0-0.5	.32	.37			
	33-43	---	---	---	---	---	---	---	---			
Tyee	0-13	8-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.20	.32	2	2	134
	13-16	3-10	1.35-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.15	.37			
	16-26	---	---	---	---	---	---	---	---			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
494:												
Tyee	0-13	8-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.20	.32	2	2	134
	13-16	3-10	1.35-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.15	.37			
	16-26	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
495:												
Tyee	0-13	8-15	1.20-1.40	0.6-2.0	0.15-0.18	0.0-2.9	1.0-3.0	.20	.32	2	2	134
	13-16	3-10	1.35-1.55	0.6-2.0	0.09-0.13	0.0-2.9	0.5-1.0	.15	.37			
	16-26	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
496:												
Typic Haplaquolls	0-8	5-12	1.30-1.50	2.0-6.0	0.13-0.15	0.0-2.9	1.0-3.0	.37	.37	5	3	86
	8-24	3-12	1.40-1.60	2.0-20.0	0.06-0.13	0.0-2.9	1.0-2.0	.15	.37			
	24-60	3-12	1.40-1.60	2.0-20.0	0.04-0.15	0.0-2.9	0.0-1.0	.10	.37			
497:												
Typic Xerorthents	0-5	10-15	1.35-1.55	0.6-2.0	0.12-0.18	0.0-2.9	2.0-4.0	.28	.28	5	5	56
	5-9	10-18	1.55-1.65	0.6-6.0	0.09-0.17	0.0-2.9	0.5-1.0	.24	.32			
	9-60	2-30	1.50-1.65	0.2-6.0	0.03-0.19	3.0-5.9	0.0-0.5	.20	.32			
Typic Xerochrepts	0-7	10-18	1.35-1.55	0.6-2.0	0.07-0.10	0.0-2.9	2.0-4.0	.17	.32	5	4	86
	7-22	15-30	1.50-1.60	0.2-0.6	0.07-0.17	3.0-5.9	0.5-1.0	.20	.37			
	22-31	15-27	1.50-1.60	0.2-0.6	0.08-0.13	3.0-5.9	0.5-1.0	.24	.43			
	31-60	18-34	1.45-1.65	0.2-0.6	0.13-0.21	3.0-5.9	0.0-0.5	.37	.37			
498:												
Ultic Haploxerolls	0-13	8-15	1.35-1.45	0.6-2.0	0.12-0.15	0.0-2.9	1.0-3.0	.20	.37	5	6	48
	13-28	3-30	1.40-1.55	0.2-6.0	0.08-0.19	0.0-2.9	0.5-1.0	.24	.32			
	28-60	2-19	1.40-1.60	0.2-20.0	0.03-0.19	0.0-2.9	0.0-0.5	.17	.32			
499:												
Uncas	0-7	0-0	0.40-0.60	0.6-2.0	0.40-0.45	0.0-2.9	35-50	---	---	5	8	0
	7-11	5-15	0.65-0.85	0.6-2.0	0.19-0.23	0.0-2.9	20-30	.43	.43			
	11-52	5-15	0.65-0.85	0.6-2.0	0.17-0.20	0.0-2.9	10-20	.49	.49			
	52-60	10-30	0.80-1.35	0.2-0.6	0.19-0.21	3.0-5.9	5.0-10	.55	.55			
500:												
Vanbrunt	0-3	5-16	1.30-1.40	2.0-6.0	0.09-0.11	0.0-2.9	2.0-3.0	.17	.24	2	5	56
	3-10	5-12	1.30-1.40	2.0-6.0	0.08-0.11	0.0-2.9	1.0-2.0	.15	.24			
	10-25	3-8	1.50-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			
	25-29	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
501:												
Vanbrunt	0-3	5-16	1.30-1.40	2.0-6.0	0.09-0.11	0.0-2.9	2.0-3.0	.17	.24	2	5	56
	3-10	5-12	1.30-1.40	2.0-6.0	0.08-0.11	0.0-2.9	1.0-2.0	.15	.24			
	10-25	3-8	1.50-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			
	25-29	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
502:												
Vanbrunt	0-3	5-16	1.30-1.40	2.0-6.0	0.09-0.11	0.0-2.9	2.0-3.0	.17	.24	2	5	56
	3-10	5-12	1.30-1.40	2.0-6.0	0.08-0.11	0.0-2.9	1.0-2.0	.15	.24			
	10-25	3-8	1.50-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			
	25-29	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
503:												
Wannacott	0-10	12-18	1.25-1.35	0.6-2.0	0.18-0.20	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	10-15	12-18	1.35-1.45	0.6-2.0	0.18-0.20	0.0-2.9	1.0-2.0	.49	.49			
	15-29	18-35	1.45-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.5-1.0	.43	.49			
	29-35	8-18	1.60-1.85	0.06-0.2	0.07-0.09	0.0-2.9	0.0-0.5	.15	.28			
	35-60	8-18	1.70-2.00	0.06-0.2	0.06-0.08	0.0-2.9	0.0-0.5	.15	.32			
504:												
Wannacott	0-10	12-18	1.25-1.35	0.6-2.0	0.18-0.20	0.0-2.9	1.0-2.0	.43	.43	3	5	56
	10-15	12-18	1.35-1.45	0.6-2.0	0.18-0.20	0.0-2.9	1.0-2.0	.49	.49			
	15-29	18-35	1.45-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.5-1.0	.43	.49			
	29-35	8-18	1.60-1.85	0.06-0.2	0.07-0.09	0.0-2.9	0.0-0.5	.15	.28			
	35-60	8-18	1.70-2.00	0.06-0.2	0.06-0.08	0.0-2.9	0.0-0.5	.15	.32			
505:												
Wapal	0-5	8-12	1.20-1.40	2.0-6.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.24	2	4	86
	5-11	8-12	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	0.5-1.0	.10	.28			
	11-60	0-5	1.50-1.70	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.02	.20			
506:												
Wapal	0-7	3-10	1.40-1.50	2.0-6.0	0.08-0.11	0.0-2.9	1.0-3.0	.15	.28	2	4	86
	7-15	3-8	1.45-1.55	2.0-6.0	0.05-0.09	0.0-2.9	0.5-1.0	.10	.28			
	15-60	1-5	1.50-1.65	20.0-100.0	0.01-0.04	0.0-2.9	0.0-0.5	.02	.15			
507:												
Wapal	0-5	8-12	1.20-1.40	2.0-6.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.24	2	4	86
	5-11	8-12	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	0.5-1.0	.10	.28			
	11-60	0-5	1.50-1.70	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.02	.20			
508:												
Wapal	0-5	8-12	1.20-1.40	2.0-6.0	0.10-0.12	0.0-2.9	1.0-3.0	.15	.24	2	4	86
	5-11	8-12	1.35-1.55	2.0-6.0	0.06-0.10	0.0-2.9	0.5-1.0	.10	.28			
	11-60	0-5	1.50-1.70	20.0-100.0	0.03-0.05	0.0-2.9	0.0-0.5	.02	.20			
509:												
Wellscreek	0-10	12-18	1.10-1.20	0.6-2.0	0.10-0.15	0.0-2.9	2.0-4.0	.20	.32	5	6	48
	10-24	15-20	1.30-1.50	0.6-2.0	0.10-0.17	0.0-2.9	1.0-2.0	.15	.37			
	24-60	18-30	1.30-1.50	0.2-0.6	0.07-0.12	0.0-2.9	0.0-0.5	.10	.32			
510:												
Wellscreek	0-10	12-18	1.10-1.20	0.6-2.0	0.10-0.15	0.0-2.9	2.0-4.0	.20	.32	5	6	48
	10-24	15-20	1.30-1.50	0.6-2.0	0.10-0.17	0.0-2.9	1.0-2.0	.15	.37			
	24-60	18-30	1.30-1.50	0.2-0.6	0.07-0.12	0.0-2.9	0.0-0.5	.10	.32			
511:												
Wellscreek	0-6	12-18	1.10-1.20	0.6-2.0	0.09-0.12	0.0-2.9	2.0-4.0	.15	.32	5	7	38
	6-14	15-20	1.30-1.50	0.6-2.0	0.10-0.17	0.0-2.9	1.0-2.0	.15	.37			
	14-26	18-30	1.30-1.50	0.6-2.0	0.07-0.14	0.0-2.9	0.5-1.0	.10	.37			
	26-42	18-26	1.30-1.50	0.6-2.0	0.07-0.14	0.0-2.9	0.5-1.0	.10	.37			
	42-60	18-30	1.30-1.50	0.2-0.6	0.07-0.12	0.0-2.9	0.0-0.5	.10	.32			
512:												
Whitestone	0-6	8-12	1.00-1.20	0.6-2.0	0.14-0.17	0.0-2.9	2.0-3.0	.28	.32	5	5	56
	6-29	3-8	1.20-1.50	2.0-6.0	0.06-0.09	0.0-2.9	1.0-2.0	.10	.28			
	29-60	3-8	1.30-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			
513:												
Whitestone	0-16	5-10	1.10-1.30	2.0-6.0	0.09-0.12	0.0-2.9	2.0-3.0	.15	.28	5	4	86
	16-32	3-8	1.20-1.50	2.0-6.0	0.06-0.09	0.0-2.9	1.0-2.0	.10	.28			
	32-60	3-8	1.30-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
514:												
Whitestone	0-16	5-10	1.10-1.30	2.0-6.0	0.09-0.12	0.0-2.9	2.0-3.0	.15	.28	5	4	86
	16-32	3-8	1.20-1.50	2.0-6.0	0.06-0.09	0.0-2.9	1.0-2.0	.10	.28			
	32-60	3-8	1.30-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			
515:												
Whitestone	0-10	5-10	1.10-1.30	2.0-6.0	0.07-0.10	0.0-2.9	2.0-3.0	.15	.28	5	5	56
	10-27	5-10	1.20-1.50	2.0-6.0	0.05-0.08	0.0-2.9	1.0-2.0	.10	.28			
	27-60	3-8	1.30-1.60	2.0-6.0	0.04-0.07	0.0-2.9	0.5-1.0	.10	.28			
516:												
Whitestone	0-16	5-10	1.10-1.30	2.0-6.0	0.09-0.12	0.0-2.9	2.0-3.0	.15	.28	5	4	86
	16-32	3-8	1.20-1.50	2.0-6.0	0.06-0.09	0.0-2.9	1.0-2.0	.10	.28			
	32-60	3-8	1.30-1.60	2.0-6.0	0.05-0.08	0.0-2.9	0.5-1.0	.10	.28			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
517:												
Wilmont	0-5	5-15	0.75-0.85	0.6-2.0	0.18-0.20	0.0-2.9	3.0-4.0	.32	.32	3	5	56
	5-12	5-18	0.75-0.85	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.24	.32			
	12-27	5-15	1.45-1.55	0.6-2.0	0.06-0.11	0.0-2.9	0.5-1.0	.10	.32			
	27-47	5-15	1.45-1.55	6.0-20.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
	47-60	0-10	1.55-1.65	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.02	.20			
518:												
Wilmont	0-5	5-15	0.75-0.85	0.6-2.0	0.18-0.20	0.0-2.9	3.0-4.0	.32	.32	3	5	56
	5-12	5-18	0.75-0.85	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.24	.32			
	12-27	5-15	1.45-1.55	0.6-2.0	0.06-0.11	0.0-2.9	0.5-1.0	.10	.32			
	27-47	5-15	1.45-1.55	6.0-20.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
	47-60	0-10	1.55-1.65	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.02	.20			
519:												
Wilmont	0-4	5-15	0.75-0.85	0.6-2.0	0.18-0.20	0.0-2.9	3.0-4.0	.32	.32	3	5	56
	4-11	5-18	0.75-0.85	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.24	.32			
	11-21	5-15	1.45-1.55	0.6-2.0	0.06-0.11	0.0-2.9	0.5-1.0	.10	.32			
	21-36	5-15	1.45-1.55	6.0-20.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
	36-60	0-10	1.55-1.65	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.02	.20			
520:												
Wilmont	0-4	5-15	0.75-0.85	0.6-2.0	0.18-0.20	0.0-2.9	3.0-4.0	.32	.32	3	5	56
	4-11	5-18	0.75-0.85	0.6-2.0	0.15-0.19	0.0-2.9	1.0-2.0	.24	.32			
	11-21	5-15	1.45-1.55	0.6-2.0	0.06-0.11	0.0-2.9	0.5-1.0	.10	.32			
	21-36	5-15	1.45-1.55	6.0-20.0	0.03-0.10	0.0-2.9	0.0-0.5	.05	.32			
	36-60	0-10	1.55-1.65	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.5	.02	.20			
521:												
Winchester	0-9	0-5	1.40-1.65	6.0-20.0	0.07-0.10	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	9-60	0-5	1.50-1.70	6.0-20.0	0.05-0.07	0.0-2.9	0.0-0.5	.15	.17			
522:												
Winchester	0-9	0-5	1.40-1.65	6.0-20.0	0.07-0.10	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	9-60	0-5	1.50-1.70	6.0-20.0	0.05-0.07	0.0-2.9	0.0-0.5	.15	.17			
523:												
Winchester	0-9	0-5	1.40-1.65	6.0-20.0	0.07-0.10	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	9-60	0-5	1.50-1.70	6.0-20.0	0.05-0.07	0.0-2.9	0.0-0.5	.15	.17			
524:												
Winchester	0-9	0-5	1.40-1.65	6.0-20.0	0.07-0.10	0.0-2.9	0.5-1.0	.15	.17	5	2	134
	9-60	0-5	1.50-1.70	6.0-20.0	0.05-0.07	0.0-2.9	0.0-0.5	.15	.17			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	*Pct*	*g/cc*	*In/hr*	*In/in*	*Pct*	*Pct*					
524:												
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
525:												
Winthrop	0-10	3-8	1.25-1.45	2.0-6.0	0.07-0.10	0.0-2.9	1.0-2.0	.10	.24	2	4	86
	10-60	0-2	1.45-1.65	20.0-100.0	0.02-0.04	0.0-2.9	0.0-0.5	.02	.20			
526:												
Wynhoff	0-7	10-15	1.35-1.45	0.6-2.0	0.08-0.13	0.0-2.9	1.0-2.0	.10	.28	2	6	48
	7-12	8-15	1.40-1.50	0.6-6.0	0.12-0.18	0.0-2.9	1.0-2.0	.24	.28			
	12-28	8-15	1.40-1.50	0.6-6.0	0.05-0.11	0.0-2.9	1.0-2.0	.05	.28			
	28-34	8-15	1.45-1.55	0.6-6.0	0.04-0.10	0.0-2.9	0.5-1.0	.05	.28			
	34-38	---	---	---	---	---	---	---	---			
527:												
Wynhoff	0-7	10-15	1.35-1.45	0.6-2.0	0.08-0.13	0.0-2.9	1.0-2.0	.10	.28	2	6	48
	7-12	8-15	1.40-1.50	0.6-6.0	0.12-0.18	0.0-2.9	1.0-2.0	.24	.28			
	12-28	8-15	1.40-1.50	0.6-6.0	0.05-0.11	0.0-2.9	1.0-2.0	.05	.28			
	28-34	8-15	1.45-1.55	0.6-6.0	0.04-0.10	0.0-2.9	0.5-1.0	.05	.28			
	34-38	---	---	---	---	---	---	---	---			
528:												
Xeric Torriorthents	0-19	5-15	1.20-1.40	2.0-6.0	0.09-0.12	0.0-2.9	0.5-1.0	.28	.32	5	4	86
	19-60	5-30	1.45-1.70	0.2-20.0	0.02-0.17	0.0-2.9	0.0-0.5	.15	.28			
529:												
Xeric Torriorthents	0-8	2-8	1.25-1.45	6.0-20.0	0.02-0.06	0.0-2.9	0.5-1.0	.05	.24	5	5	56
	8-60	5-30	1.45-1.70	0.2-20.0	0.02-0.17	0.0-2.9	0.0-0.5	.15	.28			
530:												
Xerochrepts	0-3	5-15	1.10-1.30	0.6-2.0	0.08-0.11	0.0-2.9	2.0-4.0	.17	.32	5	7	38
	3-24	3-15	0.85-1.45	2.0-6.0	0.03-0.10	0.0-2.9	0.5-1.0	.05	.32			
	24-60	3-15	1.35-1.55	2.0-6.0	0.02-0.05	0.0-2.9	0.0-0.5	.05	.32			
Rubble land	0-60	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	---
531:												
Water	---	---	---	---	---	---	---	---	---	---	---	---
532:												
Dam	---	---	---	---	---	---	---	---	---	---	---	---

Table 19.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
1:						
Achimin	0-18	6.0-12	6.6-7.3	0	0	0
	18-34	15-25	7.4-8.4	0	0.0-2.0	0
	34-60	10-20	7.4-9.0	5-10	0.0-4.0	0-2
2:						
Achimin	0-18	6.0-12	6.6-7.3	0	0	0
	18-34	15-25	7.4-8.4	0	0.0-2.0	0
	34-60	10-20	7.4-9.0	5-10	0.0-4.0	0-2
Calcic Pachic Haploxerolls	0-24	5.0-13	6.6-7.3	0	0	0
	24-42	3.0-9.0	6.6-7.8	0	0	0
	42-60	2.0-9.0	7.9-9.0	15-35	2.0-4.0	0-2
3:						
Aeneas	0-10	2.0-5.0	6.6-7.8	0	0	0
	10-27	2.0-5.0	6.6-7.8	0	0	0
	27-60	1.0-3.0	6.6-7.8	0	0	0
4:						
Aeneas	0-10	2.0-5.0	6.6-7.8	0	0	0
	10-27	2.0-5.0	6.6-7.8	0	0	0
	27-60	1.0-3.0	6.6-7.8	0	0	0
5:						
Ahtanum	0-12	3.0-11	8.5-9.0	5-15	15.0-30.0	5-10
	12-24	3.0-9.0	8.5-9.0	5-15	15.0-30.0	5-10
	24-25	2.0-7.0	8.5-9.0	---	---	---
	25-60	2.0-7.0	8.5-9.0	5-15	15.0-30.0	5-10
6:						
Aits	0-4	10-30	6.1-7.3	0	0	0
	4-13	10-30	6.1-7.3	0	0	0
	13-27	3.0-7.0	6.1-7.3	0	0	0
	27-60	2.0-5.0	6.1-7.3	0	0	0
7:						
Aits	0-4	10-30	6.1-7.3	0	0	0
	4-13	10-30	6.1-7.3	0	0	0
	13-27	3.0-7.0	6.1-7.3	0	0	0
	27-60	2.0-5.0	6.1-7.3	0	0	0
8:						
Aits	0-4	10-30	6.1-6.5	0	0	0
	4-12	10-30	6.1-7.3	0	0	0
	12-33	3.0-7.0	6.1-7.3	0	0	0
	33-42	3.0-7.0	6.1-7.3	0	0	0
	42-60	0.0-5.0	6.6-7.3	0	0	0
9:						
Anders	0-14	2.0-8.0	6.6-7.8	0	0	0
	14-23	1.0-5.0	6.6-8.4	0	0.0-2.0	0
	23-27	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
10:						
Andic Cryaquepts-----	0-9	10-30	5.6-6.5	0	0	0
	9-17	4.0-9.0	5.6-6.5	0	0	0
	17-22	2.0-4.0	5.6-6.5	0	0	0
	22-60	0.0-4.0	5.6-6.5	0	0	0
11:						
Annum-----------	0-12	5.0-9.0	6.6-7.3	0	0	0
	12-24	5.0-11	6.6-7.3	0	0	0
	24-46	5.0-11	6.6-7.8	0	0	0
	46-53	3.0-6.0	7.4-8.4	1-5	0.0-2.0	0
	53-63	---	---	---	---	---
12:						
Annum-----------	0-15	5.0-9.0	6.6-7.3	0	0	0
	15-24	5.0-11	6.6-7.3	0	0	0
	24-45	5.0-11	6.6-7.8	0	0	0
	45-54	3.0-6.0	7.4-8.4	1-5	0.0-2.0	0
	54-64	---	---	---	---	---
13:						
Annum-----------	0-15	5.0-9.0	6.6-7.3	0	0	0
	15-24	5.0-11	6.6-7.3	0	0	0
	24-45	5.0-11	6.6-7.8	0	0	0
	45-54	3.0-6.0	7.4-8.4	1-5	0.0-2.0	0
	54-64	---	---	---	---	---
Annum-----------	0-12	5.0-9.0	6.6-7.3	0	0	0
	12-24	5.0-11	6.6-7.3	0	0	0
	24-46	5.0-11	6.6-7.8	0	0	0
	46-53	3.0-6.0	7.4-8.4	0	0.0-2.0	0
	53-63	---	---	---	---	---
14:						
Apex-----------	0-3	10-30	6.1-7.3	0	0	0
	3-13	10-30	6.1-7.3	0	0	0
	13-30	2.0-5.0	6.1-7.3	0	0	0
	30-60	1.0-4.0	6.1-7.3	1-5	0	0
15:						
Apex-----------	0-3	10-30	6.1-7.3	0	0	0
	3-13	10-30	6.1-7.3	0	0	0
	13-30	2.0-5.0	6.1-7.3	0	0	0
	30-60	1.0-4.0	6.1-7.3	0	0	0
16:						
Apex-----------	0-3	10-30	6.1-7.3	0	0	0
	3-13	10-30	6.1-7.3	0	0	0
	13-30	2.0-5.0	6.1-7.3	0	0	0
	30-60	1.0-4.0	6.1-7.3	0	0	0
17:						
Apex-----------	0-3	10-30	6.1-7.3	0	0	0
	3-12	10-30	6.1-7.3	0	0	0
	12-27	2.0-5.0	6.1-7.3	0	0	0
	27-60	1.0-4.0	6.1-7.3	0	0	0
18:						
Apex-----------	0-3	10-30	6.1-7.3	0	0	0
	3-12	10-30	6.1-7.3	0	0	0
	12-27	2.0-5.0	6.1-7.3	0	0	0
	27-60	1.0-4.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
19:						
Apex	0-3	10-30	6.1-7.3	0	0	0
	3-12	10-30	6.1-7.3	0	0	0
	12-27	2.0-5.0	6.1-7.3	0	0	0
	27-60	1.0-4.0	6.1-7.3	0	0	0
20:						
Aquic Xerofluvents	0-3	2.0-8.0	6.1-7.3	0	0	0
	3-15	1.0-5.0	6.1-7.3	0	0	0
	15-60	1.0-3.0	6.1-7.3	0	0	0
21:						
Aquic Xerofluvents	0-5	2.0-8.0	6.1-7.3	0	0	0
	5-60	1.0-4.0	6.1-7.3	0	0	0
22:						
Aquic Xerofluvents	0-15	1.0-7.0	6.1-7.3	0	0	0
	15-43	1.0-5.0	6.1-7.3	0	0	0
	43-60	1.0-3.0	6.1-7.3	0	0	0
23:						
Badge	0-10	3.0-10	6.6-7.8	0	0	0
	10-38	7.0-11	6.6-7.8	0	0	0
	38-60	3.0-8.0	7.4-8.4	0	0.0-4.0	0
24:						
Badge	0-10	3.0-10	6.6-7.8	0	0	0
	10-38	7.0-11	6.6-7.8	0	0	0
	38-60	3.0-8.0	7.4-8.4	0	0.0-4.0	0
Rubble land	0-60	---	---	---	---	---
25:						
Badland	0-60	---	---	---	---	---
26:						
Bakeoven	0-3	10-20	6.1-7.3	0	0	0
	3-7	10-20	6.1-7.3	0	0	0
	7-11	---	---	---	---	---
27:						
Bakeoven	0-3	10-20	6.1-7.3	0	0	0
	3-7	10-20	6.1-7.3	0	0	0
	7-11	---	---	---	---	---
Olical	0-15	5.0-9.0	6.6-7.3	0-5	0	0
	15-23	3.0-7.0	7.9-9.0	5-15	0.0-4.0	0-2
	23-38	3.0-5.0	8.5-9.0	15-35	2.0-8.0	15-30
	38-51	2.0-4.0	8.5-9.0	15-35	2.0-8.0	15-30
	51-55	---	---	---	---	---
28:						
Bakeoven	0-3	10-20	6.1-7.3	0	0	0
	3-7	10-20	6.1-7.3	0	0	0
	7-11	---	---	---	---	---
Timentwa	0-18	5.0-20	6.1-7.8	0	0	0
	18-41	5.0-15	6.6-8.4	0-5	0	0
	41-56	2.0-9.0	7.4-9.0	15-20	0.0-4.0	0-2
	56-60	0.0-2.0	7.9-9.0	---	---	---
Rock outcrop	0-60	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
29:						
Baldknob	0-4	4.0-9.0	6.1-7.3	0	0	0
	4-14	2.0-7.0	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
Thout	0-4	4.0-9.0	6.6-7.3	0	0	0
	4-18	4.0-9.0	6.6-7.3	0	0	0
	18-26	3.0-7.0	6.6-7.3	0	0	0
	26-30	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
30:						
Baldknob	0-4	4.0-9.0	6.1-7.3	0	0	0
	4-14	2.0-7.0	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
Thout	0-4	4.0-9.0	6.6-7.3	0	0	0
	4-18	4.0-9.0	6.6-7.3	0	0	0
	18-26	3.0-7.0	6.6-7.3	0	0	0
	26-30	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
31:						
Barnellcreek	0-26	10-30	6.6-7.3	0	0	0
	26-42	2.0-6.0	6.6-7.3	0	0	0
	42-60	1.0-3.0	6.1-7.3	0	0	0
32:						
Bearspring	0-12	5.0-9.0	6.1-7.3	0	0	0
	12-35	2.0-5.0	6.1-7.3	0	0	0
	35-50	1.0-4.0	6.1-7.3	0	0	0
	50-60	1.0-3.0	6.1-7.3	0	0	0
33:						
Bearspring	0-6	5.0-9.0	6.1-7.3	0	0	0
	6-11	3.0-7.0	6.1-7.3	0	0	0
	11-27	2.0-6.0	6.1-7.3	0	0	0
	27-50	1.0-4.0	6.1-7.3	0	0	0
	50-60	1.0-3.0	6.1-7.3	0	0	0
34:						
Bernhill	0-4	3.0-7.0	6.1-7.3	0	0	0
	4-27	2.0-5.0	6.1-7.3	0	0	0
	27-36	5.0-10	6.1-7.3	0	0	0
	36-60	2.0-5.0	6.1-7.3	0	0	0
35:						
Bernhill	0-4	3.0-7.0	6.1-7.3	0	0	0
	4-27	2.0-5.0	6.1-7.3	0	0	0
	27-36	5.0-10	6.1-7.3	0	0	0
	36-60	2.0-5.0	6.1-7.3	0	0	0
36:						
Beverly	0-6	1.0-3.0	6.6-7.8	0	0	0
	6-17	1.0-3.0	6.6-7.8	0	0	0
	17-60	0.0-2.0	6.6-7.8	0	0	0
37:						
Bisbee	0-5	1.0-2.0	6.1-7.3	0	0	0
	5-40	0.0-2.0	6.1-7.3	0	0	0
	40-60	0.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
38:						
Bisbee	0-5	1.0-2.0	6.1-7.3	0	0	0
	5-40	0.0-2.0	6.1-7.3	0	0	0
	40-60	0.0-2.0	6.1-7.3	0	0	0
39:						
Boesel	0-13	3.0-13	6.6-7.3	0	0	0
	13-20	2.0-7.0	6.6-7.3	0	0	0
	20-29	1.0-4.0	6.6-7.3	0	0	0
	29-60	1.0-3.0	6.6-7.3	0	0	0
40:						
Bong	0-8	5.0-10	6.1-7.3	0	0	0
	8-17	4.0-8.0	6.1-7.3	0	0	0
	17-60	1.0-3.0	6.1-7.3	0	0	0
41:						
Bong	0-8	5.0-10	6.1-7.3	0	0	0
	8-17	4.0-8.0	6.1-7.3	0	0	0
	17-60	1.0-3.0	6.1-7.3	0	0	0
42:						
Bong	0-13	5.0-10	6.1-7.3	0	0	0
	13-21	4.0-8.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
43:						
Borgeau	0-9	4.0-12	6.6-7.3	0	0	0
	9-17	3.0-7.0	6.1-6.5	0	0	0
	17-60	2.0-5.0	5.6-6.5	0	0	0
44:						
Borgeau	0-9	4.0-12	6.6-7.3	0	0	0
	9-17	3.0-7.0	6.1-6.5	0	0	0
	17-60	2.0-5.0	5.6-6.5	0	0	0
45:						
Borgeau	0-9	4.0-12	6.6-7.3	0	0	0
	9-17	3.0-7.0	6.1-6.5	0	0	0
	17-60	2.0-5.0	5.6-6.5	0	0	0
Rock outcrop	0-60	---	---	---	---	---
46:						
Borosaprists	0-8	70-120	6.1-7.3	0	0	0
	8-18	40-80	6.1-7.3	0	0	0
	18-55	30-50	6.1-7.3	0	0	0
	55-60	40-80	6.1-7.3	0	0	0
47:						
Bossburg	0-6	40-80	6.6-7.3	0	0	0
	6-13	35-75	6.6-7.8	0	0	0
	13-29	30-50	6.6-7.8	0	0	0
	29-60	10-25	6.6-7.8	0	0	0
48:						
Broadax	0-11	11-18	6.1-7.3	0	0	0
	11-38	18-33	7.4-8.4	1-5	0.0-2.0	0
	38-60	13-22	7.4-8.4	5-15	2.0-4.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
49:						
Broadax	0-11	11-18	6.1-7.3	0	0	0
	11-38	18-33	7.4-8.4	1-5	0.0-2.0	0
	38-60	13-22	7.4-8.4	5-15	2.0-4.0	0
50:						
Brusher	0-9	10-30	6.1-7.3	0	0	0
	9-14	10-30	6.1-7.3	0	0	0
	14-24	4.0-6.0	6.1-7.3	0	0	0
	24-50	5.0-11	6.1-7.3	0	0	0
	50-60	0.0-2.0	6.1-7.3	0	0	0
51:						
Brusher	0-5	10-30	6.1-7.3	0	0	0
	5-17	10-30	6.1-7.3	0	0	0
	17-51	4.0-6.0	6.1-7.3	0	0	0
	51-56	5.0-11	6.1-7.3	0	0	0
	56-60	0.0-2.0	6.1-7.3	0	0	0
52:						
Brusher	0-9	10-30	6.1-7.3	0	0	0
	9-14	10-30	6.1-7.3	0	0	0
	14-24	4.0-6.0	6.1-7.3	0	0	0
	24-50	5.0-11	6.1-7.3	0	0	0
	50-60	0.0-2.0	6.1-7.3	0	0	0
53:						
Brusher	0-9	10-30	6.1-7.3	0	0	0
	9-14	10-30	6.1-7.3	0	0	0
	14-24	4.0-6.0	6.1-7.3	0	0	0
	24-50	5.0-11	6.1-7.3	0	0	0
	50-60	0.0-2.0	6.1-7.3	0	0	0
54:						
Buhrig	0-7	10-30	5.6-7.3	0	0	0
	7-18	10-30	5.6-7.3	0	0	0
	18-32	3.0-7.0	5.6-7.3	0	0	0
	32-36	---	---	---	---	---
55:						
Buhrig	0-7	10-30	5.6-7.3	0	0	0
	7-18	10-30	5.6-7.3	0	0	0
	18-32	3.0-7.0	5.6-7.3	0	0	0
	32-36	---	---	---	---	---
56:						
Buhrig	0-4	10-30	6.1-7.3	0	0	0
	4-13	10-30	6.1-7.3	0	0	0
	13-31	1.0-5.0	6.1-7.3	0	0	0
	31-35	---	---	---	---	---
57:						
Buhrig	0-7	10-30	5.6-7.3	0	0	0
	7-18	10-30	5.6-7.3	0	0	0
	18-32	3.0-7.0	5.6-7.3	0	0	0
	32-36	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
58:						
Buhrig	0-7	10-30	5.6-7.3	0	0	0
	7-18	10-30	5.6-7.3	0	0	0
	18-32	3.0-7.0	5.6-7.3	0	0	0
	32-36	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
59:						
Canteen	0-5	10-30	5.6-7.3	0	0	0
	5-13	10-30	5.6-7.3	0	0	0
	13-34	2.0-4.0	5.6-7.3	0	0	0
	34-45	1.0-3.0	5.6-7.3	0	0	0
	45-55	---	---	---	---	---
60:						
Canteen	0-5	10-30	5.6-7.3	0	0	0
	5-13	10-30	5.6-7.3	0	0	0
	13-34	2.0-4.0	5.6-7.3	0	0	0
	34-45	1.0-3.0	5.6-7.3	0	0	0
	45-55	---	---	---	---	---
61:						
Canteen	0-5	10-30	5.6-7.3	0	0	0
	5-14	10-30	5.6-7.3	0	0	0
	14-27	2.0-4.0	5.6-7.3	0	0	0
	27-50	1.0-3.0	5.6-7.3	0	0	0
	50-60	---	---	---	---	---
62:						
Canteen	0-5	10-30	5.6-7.3	0	0	0
	5-14	10-30	5.6-7.3	0	0	0
	14-27	2.0-4.0	5.6-7.3	0	0	0
	27-50	1.0-3.0	5.6-7.3	0	0	0
	50-60	---	---	---	---	---
63:						
Capoose	0-2	10-30	5.6-7.3	0	0	0
	2-17	10-30	5.6-7.3	0	0	0
	17-35	1.0-4.0	5.6-7.3	0	0	0
	35-39	---	---	---	---	---
64:						
Capoose	0-2	10-30	5.6-7.3	0	0	0
	2-17	10-30	5.6-7.3	0	0	0
	17-35	1.0-4.0	5.6-7.3	0	0	0
	35-39	---	---	---	---	---
65:						
Capoose	0-2	10-30	5.6-7.3	0	0	0
	2-17	10-30	5.6-7.3	0	0	0
	17-35	1.0-4.0	5.6-7.3	0	0	0
	35-39	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
66:						
Capoose	0-2	10-30	5.6-7.3	0	0	0
	2-17	10-30	5.6-7.3	0	0	0
	17-35	1.0-4.0	5.6-7.3	0	0	0
	35-39	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
67:						
Cashmere	0-10	2.0-5.0	6.1-7.3	0	0	0
	10-36	2.0-5.0	6.6-7.8	0	0	0
	36-46	1.0-3.0	6.6-7.8	0	0	0
	46-60	0.0-2.0	7.4-8.4	0	0.0-2.0	0
68:						
Cashmere	0-10	2.0-5.0	6.1-7.3	0	0	0
	10-36	2.0-5.0	6.6-7.8	0	0	0
	36-46	1.0-3.0	6.6-7.8	0	0	0
	46-60	0.0-2.0	7.4-8.4	0	0.0-2.0	0
69:						
Cashmere	0-10	2.0-5.0	6.1-7.3	0	0	0
	10-36	2.0-5.0	6.6-7.8	0	0	0
	36-46	1.0-3.0	6.6-7.8	0	0	0
	46-60	0.0-2.0	7.4-8.4	0	0.0-2.0	0
70:						
Cashmere	0-10	2.0-5.0	6.1-7.3	0	0	0
	10-36	2.0-5.0	6.6-7.8	0	0	0
	36-46	1.0-3.0	6.6-7.8	0	0	0
	46-60	0.0-2.0	7.4-8.4	0	0.0-2.0	0
71:						
Cashmont	0-19	2.0-6.0	6.1-7.8	0	0	0
	19-38	2.0-4.0	6.6-7.8	0	0	0
	38-60	0.0-2.0	6.6-7.8	0	0	0
72:						
Cashmont	0-19	2.0-6.0	6.1-7.8	0	0	0
	19-38	2.0-4.0	6.6-7.8	0	0	0
	38-60	0.0-2.0	6.6-7.8	0	0	0
73:						
Cedonia	0-2	8.0-13	6.1-7.3	0	0	0
	2-24	9.0-17	6.6-8.4	0	0.0-2.0	0
	24-60	8.0-15	7.9-9.0	0-15	2.0-4.0	0
74:						
Cedonia	0-2	8.0-13	6.1-7.3	0	0	0
	2-24	9.0-17	6.6-8.4	0	0.0-2.0	0
	24-60	8.0-15	7.9-9.0	0-15	0.0-2.0	2-4
75:						
Cedonia	0-2	8.0-13	6.1-7.3	0	0	0
	2-24	9.0-17	6.6-8.4	0	0.0-2.0	0
	24-60	8.0-15	7.9-9.0	0-15	2.0-4.0	0
76:						
Cedonia	0-2	8.0-13	6.1-7.3	0	0	0
	2-24	9.0-17	6.6-8.4	0	0.0-2.0	0
	24-60	8.0-15	7.9-9.0	0-15	2.0-4.0	0
77:						
Centralpeak	0-6	10-30	5.6-7.3	0	0	0
	6-16	10-30	5.6-7.3	0	0	0
	16-21	1.0-5.0	5.6-7.3	0	0	0
	21-25	1.0-3.0	5.6-7.3	0	0	0
	25-35	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
77:						
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---
78:						
Centralpeak	0-6	10-30	5.6-7.3	0	0	0
	6-16	10-30	5.6-7.3	0	0	0
	16-21	1.0-5.0	5.6-7.3	0	0	0
	21-25	1.0-3.0	5.6-7.3	0	0	0
	25-35	---	---	---	---	---
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---
79:						
Centralpeak	0-6	10-30	5.6-7.3	0	0	0
	6-16	10-30	5.6-7.3	0	0	0
	16-21	1.0-5.0	5.6-7.3	0	0	0
	21-25	1.0-3.0	5.6-7.3	0	0	0
	25-35	---	---	---	---	---
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---
80:						
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---
81:						
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---
82:						
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---
83:						
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
83:						
Brusher	0-5	10-30	6.1-7.3	0	0	0
	5-17	10-30	6.1-7.3	0	0	0
	17-56	4.0-6.0	6.1-7.3	0	0	0
	56-60	0.0-2.0	6.1-7.3	0	0	0
84:						
Centralpeak	0-6	10-30	5.6-7.3	0	0	0
	6-16	10-30	5.6-7.3	0	0	0
	16-21	1.0-5.0	5.6-7.3	0	0	0
	21-25	1.0-3.0	5.6-7.3	0	0	0
	25-35	---	---	---	---	---
Centralpeak	0-4	10-30	5.6-7.3	0	0	0
	4-12	10-30	5.6-7.3	0	0	0
	12-20	1.0-5.0	5.6-7.3	0	0	0
	20-29	1.0-3.0	5.6-7.3	0	0	0
	29-39	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
85:						
Chumstick	0-7	2.0-6.0	5.6-6.5	0	0	0
	7-12	1.0-3.0	5.6-6.5	0	0	0
	12-16	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
86:						
Chumstick	0-7	2.0-6.0	5.6-6.5	0	0	0
	7-12	1.0-3.0	5.6-6.5	0	0	0
	12-16	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
87:						
Codylake	0-5	10-30	5.6-7.3	0	0	0
	5-24	10-30	5.6-7.3	0	0	0
	24-43	1.0-3.0	5.6-7.3	0	0	0
	43-53	---	---	---	---	---
88:						
Codylake	0-5	10-30	5.6-7.3	0	0	0
	5-24	10-30	5.6-7.3	0	0	0
	24-43	1.0-3.0	5.6-7.3	0	0	0
	43-53	---	---	---	---	---
89:						
Codylake	0-5	10-30	5.6-7.3	0	0	0
	5-24	10-30	5.6-7.3	0	0	0
	24-43	1.0-3.0	5.6-7.3	0	0	0
	43-53	---	---	---	---	---
90:						
Colockum	0-10	7.0-15	6.6-7.8	0	0	0
	10-38	10-18	6.6-7.8	0	0	0
	38-60	8.0-12	7.4-8.4	15-35	0.0-4.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
91:						
Colockum	0-11	7.0-15	6.6-7.8	0	0	0
	11-22	15-25	6.6-7.8	0	0	0
	22-36	10-18	6.6-7.8	0	0	0
	36-46	8.0-14	7.4-8.4	15-35	0.0-4.0	0
	46-60	8.0-14	7.4-8.4	15-35	0.0-4.0	0
92:						
Colockum	0-10	7.0-15	6.6-7.8	0	0	0
	10-33	10-18	6.6-7.8	0	0	0
	33-60	8.0-14	7.4-8.4	15-35	0.0-4.0	0
93:						
Conconully	0-15	2.0-6.0	6.6-7.3	0	0	0
	15-35	1.0-3.0	6.6-7.3	0	0	0
	35-60	1.0-3.0	6.6-7.8	0	0	0
94:						
Conconully	0-15	2.0-6.0	6.6-7.3	0	0	0
	15-35	1.0-3.0	6.6-7.3	0	0	0
	35-60	1.0-3.0	6.6-7.8	0	0	0
95:						
Conconully	0-9	2.0-6.0	6.6-7.3	0	0	0
	9-32	1.0-4.0	6.6-7.3	0	0	0
	32-60	1.0-3.0	6.6-7.8	0	0	0
96:						
Conconully	0-9	2.0-6.0	6.6-7.3	0	0	0
	9-32	1.0-4.0	6.6-7.3	0	0	0
	32-60	1.0-3.0	6.6-7.8	0	0	0
97:						
Conconully	0-12	2.0-6.0	6.6-7.3	0	0	0
	12-21	1.0-4.0	6.6-7.3	0	0	0
	21-60	1.0-3.0	6.6-7.8	0	0	0
98:						
Conconully	0-10	2.0-6.0	6.6-7.3	0	0	0
	10-25	1.0-4.0	6.6-7.3	0	0	0
	25-60	1.0-3.0	6.6-7.8	0	0	0
99:						
Conconully	0-9	2.0-6.0	6.6-7.3	0	0	0
	9-32	1.0-4.0	6.6-7.3	0	0	0
	32-60	1.0-3.0	6.6-7.8	0	0	0
Bakeoven	0-3	10-20	6.1-7.3	0	0	0
	3-7	10-20	6.1-7.3	0	0	0
	7-11	---	---	---	---	---
100:						
Conconully	0-7	2.0-6.0	6.6-7.3	0	0	0
	7-21	1.0-4.0	6.6-7.3	0	0	0
	21-60	1.0-3.0	6.6-7.8	0	0	0
Rock outcrop	0-60	---	---	---	---	---
101:						
Conconully	0-7	2.0-6.0	6.6-7.3	0	0	0
	7-21	1.0-4.0	6.6-7.3	0	0	0
	21-60	1.0-3.0	6.6-7.8	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
101:						
Rock outcrop	0-60	---	---	---	---	---
102:						
Conconully	0-10	2.0-6.0	6.6-7.3	0	0	0
	10-25	1.0-4.0	6.6-7.3	0	0	0
	25-60	1.0-3.0	6.6-7.8	0	0	0
Swakane	0-7	4.0-8.0	6.1-7.3	0	0	0
	7-11	3.0-6.0	6.1-7.3	0	0	0
	11-14	3.0-6.0	6.6-7.8	0	0	0
	14-18	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
103:						
Couleedam	0-3	2.0-7.0	6.6-7.8	0	0	0
	3-8	2.0-7.0	6.6-7.8	0	0	0
	8-15	1.0-4.0	6.6-7.8	0	0	0
	15-19	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
104:						
Coxlake	0-6	4.0-11	6.6-7.3	0	0	0
	6-29	1.0-6.0	6.6-7.3	0	0	0
	29-48	1.0-4.0	6.6-7.3	0	0	0
	48-60	1.0-3.0	6.6-7.3	0	0	0
105:						
Cryofluvents	0-5	2.0-9.0	5.6-6.5	0	0	0
	5-12	2.0-6.0	5.6-6.5	0	0	0
	12-60	0.0-3.0	5.6-7.3	0	0	0
106:						
Cubcreek	0-10	4.0-13	6.1-7.3	0	0	0
	10-19	2.0-6.0	6.1-7.3	0	0	0
	19-60	1.0-4.0	6.6-7.8	0	0	0
107:						
Cumulic Haploxerolls	0-30	5.0-11	6.6-7.8	0	0	0
	30-48	1.0-7.0	6.6-7.8	0	0	0
	48-60	1.0-5.0	6.6-7.8	0	0	0
108:						
Dart	0-3	1.0-3.0	6.1-7.3	0	0	0
	3-32	0.0-2.0	6.1-7.3	0	0	0
	32-60	0.0-2.0	6.1-7.3	0	0	0
109:						
Dart	0-8	1.0-3.0	6.1-7.3	0	0	0
	8-16	0.0-2.0	6.1-7.3	0	0	0
	16-60	0.0-2.0	6.1-7.3	0	0	0
110:						
Dart	0-3	1.0-3.0	6.1-7.3	0	0	0
	3-32	0.0-2.0	6.1-7.3	0	0	0
	32-60	0.0-2.0	6.1-7.3	0	0	0
Springdale	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	3.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-5.0	6.1-7.3	0	0	0
	17-60	1.0-5.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
111:						
Dart	0-5	1.0-3.0	6.1-7.3	0	0	0
	5-60	0.0-2.0	6.1-7.3	0	0	0
Springdale	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	3.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-5.0	6.1-7.3	0	0	0
	17-60	1.0-5.0	6.1-7.3	0	0	0
112:						
Dehart	0-7	2.0-6.0	6.1-7.3	0	0	0
	7-32	2.0-4.0	6.1-7.3	0	0	0
	32-60	1.0-3.0	6.1-7.3	0	0	0
113:						
Dehart	0-7	2.0-6.0	6.1-7.3	0	0	0
	7-32	2.0-4.0	6.1-7.3	0	0	0
	32-60	1.0-3.0	6.1-7.3	0	0	0
114:						
Dehart	0-7	2.0-6.0	6.1-7.3	0	0	0
	7-32	2.0-4.0	6.1-7.3	0	0	0
	32-60	1.0-3.0	6.1-7.3	0	0	0
Phoebe	0-16	5.0-8.0	6.1-7.3	0	0	0
	16-30	3.0-6.0	6.1-7.3	0	0	0
	30-39	3.0-5.0	6.1-7.3	0	0	0
	39-60	0.0-2.0	6.1-7.3	0	0	0
115:						
Dehart	0-8	2.0-6.0	6.1-7.3	0	0	0
	8-30	2.0-4.0	6.1-7.3	0	0	0
	30-60	1.0-3.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
116:						
Dehart	0-8	2.0-6.0	6.1-7.3	0	0	0
	8-30	2.0-4.0	6.1-7.3	0	0	0
	30-60	1.0-3.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
117:						
Dinkelman	0-13	4.0-8.0	6.1-7.3	0	0	0
	13-39	4.0-6.0	6.1-7.8	0	0	0
	39-43	1.0-3.0	6.1-7.8	0	0	0
	43-53	---	---	---	---	---
118:						
Dinkelman	0-13	4.0-8.0	6.1-7.3	0	0	0
	13-39	4.0-6.0	6.1-7.3	0	0	0
	39-43	1.0-3.0	6.1-7.3	0	0	0
	43-53	---	---	---	---	---
119:						
Dinkelman	0-10	4.0-10	6.1-7.3	0	0	0
	10-17	4.0-6.0	6.1-7.3	0	0	0
	17-43	1.0-3.0	6.1-7.3	0	0	0
	43-53	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
120:						
Disautel	0-15	1.0-7.0	6.6-7.8	0-5	0	0
	15-32	1.0-4.0	6.6-7.8	0-5	0	0
	32-60	1.0-3.0	7.4-9.0	15-35	0.0-4.0	0-2
121:						
Disautel	0-15	1.0-7.0	6.6-7.8	0-5	0	0
	15-32	1.0-4.0	6.6-7.8	0-5	0	0
	32-60	1.0-3.0	7.4-9.0	15-35	0.0-4.0	0-2
122:						
Disautel	0-15	1.0-7.0	6.6-7.8	0-5	0	0
	15-32	1.0-4.0	6.6-7.8	0-5	0	0
	32-60	1.0-3.0	7.4-9.0	15-35	0.0-4.0	0-2
Nespelem	0-12	5.0-15	6.1-7.3	0	0	0
	12-22	5.0-10	6.6-7.8	0	0	0
	22-24	---	---	---	---	---
	24-60	5.0-10	7.9-9.0	5-20	2.0-8.0	2-4
123:						
Disautel	0-15	1.0-7.0	6.6-7.8	0-5	0	0
	15-32	1.0-4.0	6.6-7.8	0-5	0	0
	32-60	1.0-3.0	7.4-9.0	15-35	0.0-4.0	0-2
Rock outcrop	0-60	---	---	---	---	---
124:						
Donavan	0-9	2.0-10	5.6-7.3	0	0	0
	9-15	2.0-10	6.1-7.3	0	0	0
	15-33	2.0-8.0	6.1-7.3	0	0	0
	33-60	1.0-6.0	6.1-7.3	0	0	0
125:						
Donavan	0-9	2.0-10	5.6-7.3	0	0	0
	9-15	2.0-10	6.1-7.3	0	0	0
	15-33	2.0-8.0	6.1-7.3	0	0	0
	33-60	1.0-6.0	6.1-7.3	0	0	0
126:						
Donavan	0-8	2.0-10	5.6-7.3	0	0	0
	8-15	2.0-10	6.1-7.3	0	0	0
	15-36	2.0-8.0	6.1-7.3	0	0	0
	36-60	1.0-6.0	6.1-7.3	0	0	0
127:						
Donavan	0-8	2.0-10	5.6-7.3	0	0	0
	8-15	2.0-10	6.1-7.3	0	0	0
	15-36	2.0-8.0	6.1-7.3	0	0	0
	36-60	1.0-6.0	6.1-7.3	0	0	0
128:						
Donavan	0-11	3.0-12	5.6-7.3	0	0	0
	11-21	1.0-5.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
129:						
Donavan	0-11	3.0-12	5.6-7.3	0	0	0
	11-21	1.0-5.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
130:						
Donavan	0-11	3.0-12	5.6-7.3	0	0	0
	11-21	1.0-5.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
131:						
Donavan	0-5	2.0-6.0	5.6-7.3	0	0	0
	5-21	2.0-6.0	6.1-7.3	0	0	0
	21-60	1.0-4.0	6.6-7.3	0	0	0
132:						
Donavan	0-5	2.0-6.0	5.6-7.3	0	0	0
	5-21	2.0-6.0	6.1-7.3	0	0	0
	21-60	1.0-4.0	6.6-7.3	0	0	0
133:						
Donavan	0-11	3.0-12	5.6-7.3	0	0	0
	11-21	1.0-5.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
Goldlake	0-22	5.0-11	6.1-7.3	0	0	0
	22-29	3.0-7.0	6.1-7.3	0	0	0
	29-40	2.0-6.0	6.1-7.3	0	0	0
	40-60	2.0-5.0	6.1-7.3	0	0	0
134:						
Donavan	0-11	3.0-12	5.6-7.3	0	0	0
	11-21	1.0-5.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
Northstar	0-2	4.0-10	5.6-6.5	0	0	0
	2-18	2.0-7.0	6.1-7.3	0	0	0
	18-27	2.0-5.0	6.1-7.3	0	0	0
	27-31	---	---	---	---	---
135:						
Donavan	0-8	2.0-10	5.6-7.3	0	0	0
	8-15	2.0-10	6.1-7.3	0	0	0
	15-36	2.0-8.0	6.1-7.3	0	0	0
	36-60	1.0-6.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
136:						
Donavan	0-5	2.0-6.0	5.6-7.3	0	0	0
	5-21	2.0-6.0	6.1-7.3	0	0	0
	21-60	1.0-4.0	6.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
137:						
Donavan	0-10	2.0-6.0	5.6-7.3	0	0	0
	10-21	2.0-6.0	6.1-7.3	0	0	0
	21-60	1.0-4.0	6.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
138:						
Donavan	0-8	2.0-10	5.6-7.3	0	0	0
	8-15	2.0-10	6.1-7.3	0	0	0
	15-36	2.0-8.0	6.1-7.3	0	0	0
	36-60	1.0-6.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
138:						
Rock outcrop	0-60	---	---	---	---	---
139:						
Duleylake	0-17	4.0-7.0	6.6-7.3	0	0	0
	17-31	3.0-7.0	6.6-7.8	0	0	0
	31-37	7.0-10	7.4-8.4	1-5	0.0-4.0	0
	37-60	3.0-5.0	7.4-8.4	1-5	0.0-4.0	0
140:						
Elbowlake	0-2	10-30	6.1-7.3	0	0	0
	2-15	10-30	6.1-7.3	0	0	0
	15-20	3.0-5.0	6.1-7.3	0	0	0
	20-60	2.0-4.0	6.1-7.3	0	0	0
141:						
Elbowlake	0-2	10-30	6.1-7.3	0	0	0
	2-15	10-30	6.1-7.3	0	0	0
	15-20	3.0-5.0	6.1-7.3	0	0	0
	20-60	2.0-4.0	6.1-7.3	0	0	0
142:						
Elbowlake	0-2	10-30	6.1-7.3	0	0	0
	2-15	10-30	6.1-7.3	0	0	0
	15-20	3.0-5.0	6.1-7.3	0	0	0
	20-60	2.0-4.0	6.1-7.3	0	0	0
143:						
Elbowlake	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-60	2.0-4.0	6.1-7.3	0	0	0
144:						
Elbowlake	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-60	2.0-4.0	6.1-7.3	0	0	0
145:						
Elbowlake	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-60	2.0-4.0	6.1-7.3	0	0	0
146:						
Ellisforde	0-12	3.0-7.0	6.6-7.8	0	0	0
	12-30	2.0-5.0	7.4-8.4	0-5	0.0-4.0	0
	30-60	2.0-4.0	7.9-9.0	5-15	0.0-4.0	0-2
147:						
Ellisforde	0-12	3.0-7.0	6.6-7.8	0	0	0
	12-30	2.0-5.0	7.4-8.4	0-5	0.0-4.0	0
	30-60	2.0-4.0	7.9-9.0	5-15	0.0-4.0	0-2
148:						
Ellisforde	0-12	3.0-7.0	6.6-7.8	0	0	0
	12-30	2.0-5.0	7.4-8.4	0-5	0.0-4.0	0
	30-60	2.0-4.0	7.9-9.0	5-15	0.0-4.0	0-2
149:						
Elvedere	0-6	4.0-8.0	6.6-7.8	0	0	0
	6-10	10-18	7.4-8.4	0-5	0	0
	10-60	9.0-13	7.9-9.0	5-20	0.0-4.0	0-2

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
150:						
Elvedere	0-6	5.0-10	6.6-7.8	0	0	0
	6-10	10-16	7.4-8.4	0-5	0	0
	10-60	9.0-14	7.9-9.0	5-20	0.0-4.0	0-2
151:						
Elvedere	0-6	5.0-10	6.6-7.8	0	0	0
	6-10	10-16	7.4-8.4	0-5	0	0
	10-60	9.0-14	7.9-9.0	5-20	0.0-4.0	0-2
152:						
Elvedere	0-6	4.0-8.0	6.6-7.8	0	0	0
	6-10	10-18	7.4-8.4	0-5	0	0
	10-60	9.0-13	7.9-9.0	5-20	0.0-4.0	0-2
Leahy	0-3	4.0-6.0	8.5-9.0	5-20	4.0-32.0	15-30
	3-10	10-17	9.1-11.0	5-20	8.0-32.0	15-30
	10-60	9.0-14	9.1-11.0	5-20	8.0-32.0	15-30
153:						
Emdent	0-18	10-30	8.5-9.6	5-10	4.0-8.0	15-30
	18-60	10-30	7.4-9.0	1-5	2.0-4.0	5-15
154:						
Emdent	0-26	6.0-13	8.5-9.6	5-20	4.0-8.0	15-30
	26-36	4.0-10	7.9-9.0	5-20	2.0-4.0	15-30
	36-60	6.0-10	7.4-9.0	5-20	2.0-4.0	15-30
155:						
Ewall	0-7	1.0-3.0	6.6-7.3	0	0	0
	7-60	0.0-2.0	6.6-7.3	0	0	0
156:						
Ewall	0-7	1.0-3.0	6.6-7.3	0	0	0
	7-60	0.0-2.0	6.6-7.3	0	0	0
157:						
Ewall	0-13	1.0-3.0	6.6-7.3	0	0	0
	13-38	1.0-2.0	6.6-7.3	0	0	0
	38-60	1.0-2.0	6.6-7.3	0	0	0
158:						
Ewall	0-13	1.0-3.0	6.6-7.3	0	0	0
	13-38	1.0-2.0	6.6-7.3	0	0	0
	38-60	1.0-2.0	6.6-7.3	0	0	0
159:						
Ewall	0-7	4.0-15	6.6-7.3	0	0	0
	7-60	4.0-15	6.6-7.3	0	0	0
160:						
Farrell	0-10	1.0-6.0	6.6-7.8	0	0	0
	10-22	1.0-6.0	6.6-7.8	0	0	0
	22-28	1.0-4.0	7.9-9.0	15-35	0.0-4.0	0-2
	28-60	0.0-2.0	7.9-9.0	15-35	0.0-4.0	0-2
161:						
Farrell	0-10	1.0-6.0	6.6-7.8	0	0	0
	10-22	1.0-6.0	6.6-7.8	0	0	0
	22-28	1.0-4.0	7.9-9.0	15-35	0.0-4.0	0-2
	28-60	0.0-2.0	7.9-9.0	15-35	0.0-4.0	0-2

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
162:						
Farrell	0-10	1.0-6.0	6.6-7.8	0	0	0
	10-22	1.0-6.0	6.6-7.8	0	0	0
	22-28	1.0-4.0	7.9-9.0	15-35	0.0-4.0	0-2
	28-60	0.0-2.0	7.9-9.0	15-35	0.0-4.0	0-2
163:						
Farrell	0-8	2.0-5.0	6.6-7.8	0	0	0
	8-22	2.0-5.0	6.6-7.8	0	0	0
	22-40	1.0-4.0	7.9-9.0	15-35	0.0-4.0	0-2
	40-60	0.0-2.0	7.9-9.0	15-35	0.0-4.0	0-2
164:						
Fivelakes	0-10	2.0-8.0	6.6-7.3	0	0	0
	10-28	1.0-4.0	6.6-7.3	0	0	0
	28-60	0.0-1.0	6.6-7.3	0	0	0
165:						
Fivelakes	0-10	3.0-9.0	6.6-7.3	0	0	0
	10-14	2.0-8.0	6.6-7.3	0	0	0
	14-30	1.0-6.0	6.6-7.3	0	0	0
	30-60	0.0-1.0	6.6-7.3	0	0	0
166:						
Fivelakes	0-4	3.0-9.0	6.6-7.3	0	0	0
	4-12	2.0-8.0	6.6-7.3	0	0	0
	12-20	2.0-8.0	6.6-7.3	0	0	0
	20-32	1.0-6.0	6.6-7.3	0	0	0
	32-60	0.0-1.0	6.6-7.3	0	0	0
167:						
Fivelakes	0-4	3.0-9.0	6.6-7.3	0	0	0
	4-12	2.0-8.0	6.6-7.3	0	0	0
	12-20	2.0-8.0	6.6-7.3	0	0	0
	20-32	1.0-6.0	6.6-7.3	0	0	0
	32-60	0.0-1.0	6.6-7.3	0	0	0
168:						
Fivelakes	0-4	3.0-9.0	6.6-7.3	0	0	0
	4-12	1.0-6.0	6.6-7.3	0	0	0
	12-30	1.0-4.0	6.6-7.3	0	0	0
	30-60	0.0-1.0	6.6-7.3	0	0	0
169:						
Friedlander	0-3	5-15	6.1-7.3	0	0	0
	3-8	5-15	6.1-7.3	0	0	0
	8-23	5.0-9.0	5.6-6.5	0	0	0
	23-60	9.0-14	6.1-7.3	0	0	0
170:						
Friedlander	0-3	5-15	6.1-7.3	0	0	0
	3-8	5-15	6.1-7.3	0	0	0
	8-23	5.0-9.0	5.6-6.5	0	0	0
	23-60	9.0-14	6.1-7.3	0	0	0
171:						
Friedlander	0-3	5-15	6.1-7.3	0	0	0
	3-8	5-15	6.1-7.3	0	0	0
	8-23	5.0-9.0	5.6-6.5	0	0	0
	23-60	9.0-14	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
172:						
Garrison	0-12	8.0-18	6.1-7.3	0	0	0
	12-28	5.0-10	6.1-7.3	0	0	0
	28-60	0.0-2.0	6.1-7.3	0	0	0
173:						
Garrison	0-12	8.0-18	6.1-7.3	0	0	0
	12-28	5.0-10	6.1-7.3	0	0	0
	28-60	0.0-2.0	6.1-7.3	0	0	0
174:						
Garrison	0-14	8.0-18	6.1-7.3	0	0	0
	14-24	5.0-10	6.1-7.3	0	0	0
	24-60	0.0-2.0	6.1-7.3	0	0	0
175:						
Georgecreek	0-11	5.0-9.0	6.1-7.3	0	0	0
	11-19	4.0-9.0	6.1-7.3	0	0	0
	19-53	6.0-10	6.1-7.8	0	0	0
	53-58	3.0-6.0	6.6-7.8	0	0	0
	58-68	---	---	---	---	---
176:						
Georgecreek	0-11	5.0-9.0	6.1-7.3	0	0	0
	11-19	4.0-9.0	6.1-7.3	0	0	0
	19-53	6.0-10	6.1-7.8	0	0	0
	53-58	3.0-6.0	6.6-7.8	0	0	0
	58-68	---	---	---	---	---
177:						
Georgecreek	0-8	5.0-9.0	6.1-7.3	0	0	0
	8-12	4.0-9.0	6.1-7.3	0	0	0
	12-55	6.0-10	6.1-7.8	0	0	0
	55-65	---	---	---	---	---
178:						
Georgecreek	0-8	5.0-9.0	6.1-7.3	0	0	0
	8-12	4.0-9.0	6.1-7.3	0	0	0
	12-55	6.0-10	6.1-7.8	0	0	0
	55-65	---	---	---	---	---
179:						
Ginnis	0-8	2.0-6.0	6.1-7.3	0	0	0
	8-24	1.0-4.0	6.1-7.3	0	0	0
	24-34	---	---	---	---	---
180:						
Ginnis	0-10	4.0-7.0	6.1-7.3	0	0	0
	10-22	4.0-7.0	6.1-7.3	0	0	0
	22-31	3.0-5.0	6.1-7.3	0	0	0
	31-41	---	---	---	---	---
181:						
Ginnis	0-18	4.0-7.0	6.1-7.3	0	0	0
	18-23	4.0-7.0	6.1-7.3	0	0	0
	23-33	---	---	---	---	---
182:						
Ginnis	0-10	4.0-7.0	6.1-7.3	0	0	0
	10-22	4.0-7.0	6.1-7.3	0	0	0
	22-31	3.0-5.0	6.1-7.3	0	0	0
	31-41	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
182:						
Ginnis	0-18	4.0-7.0	6.1-7.3	0	0	0
	18-23	4.0-7.0	6.1-7.3	0	0	0
	23-33	---	---	---	---	---
183:						
Ginnis	0-9	4.0-7.0	6.1-7.3	0	0	0
	9-22	3.0-6.0	6.1-7.3	0	0	0
	22-32	---	---	---	---	---
Ginnis	0-12	4.0-7.0	6.1-7.3	0	0	0
	12-19	3.0-6.0	6.1-7.3	0	0	0
	19-30	1.0-4.0	6.1-7.3	0	0	0
	30-40	---	---	---	---	---
184:						
Ginnis	0-10	4.0-7.0	6.1-7.3	0	0	0
	10-22	4.0-7.0	6.1-7.3	0	0	0
	22-31	3.0-5.0	6.1-7.3	0	0	0
	31-41	---	---	---	---	---
Conconully	0-13	2.0-6.0	6.6-7.3	0	0	0
	13-33	1.0-4.0	6.6-7.3	0	0	0
	33-60	1.0-3.0	6.6-7.8	0	0	0
185:						
Ginnis	0-10	4.0-7.0	6.1-7.3	0	0	0
	10-22	4.0-7.0	6.1-7.3	0	0	0
	22-31	3.0-5.0	6.1-7.3	0	0	0
	31-41	---	---	---	---	---
Conconully	0-12	2.0-6.0	6.6-7.3	0	0	0
	12-21	1.0-4.0	6.6-7.3	0	0	0
	21-60	1.0-3.0	6.6-7.8	0	0	0
186:						
Ginnis	0-8	2.0-6.0	6.1-7.3	0	0	0
	8-24	1.0-4.0	6.1-7.3	0	0	0
	24-34	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
187:						
Glenrose	0-16	10-17	6.1-7.3	0	0	0
	16-27	6.0-13	6.1-7.3	0	0	0
	27-60	5.0-8.0	6.1-7.3	0	0	0
188:						
Glenrose	0-16	10-17	6.1-7.3	0	0	0
	16-27	6.0-13	6.1-7.3	0	0	0
	27-60	5.0-8.0	6.1-7.3	0	0	0
189:						
Goddard	0-3	10-30	6.1-7.3	0	0	0
	3-10	10-30	6.1-7.3	0	0	0
	10-18	1.0-3.0	6.1-7.3	0	0	0
	18-60	1.0-2.0	6.1-7.3	0	0	0
190:						
Goddard	0-3	10-30	6.1-7.3	0	0	0
	3-10	10-30	6.1-7.3	0	0	0
	10-18	1.0-3.0	6.1-7.3	0	0	0
	18-60	1.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
191:						
Goddard	0-3	10-30	6.1-7.3	0	0	0
	3-10	10-30	6.1-7.3	0	0	0
	10-18	1.0-3.0	6.1-7.3	0	0	0
	18-60	1.0-2.0	6.1-7.3	0	0	0
192:						
Goldlake	0-22	5.0-11	6.1-7.3	0	0	0
	22-29	3.0-7.0	6.1-7.3	0	0	0
	29-40	2.0-6.0	6.1-7.3	0	0	0
	40-60	2.0-5.0	6.1-7.3	0	0	0
193:						
Gooseflats	0-7	2.0-6.0	9.1-11.0	5-20	16.0-32.0	15-35
	7-41	0.0-2.0	8.5-9.0	5-20	8.0-16.0	15-35
	41-48	---	---	---	---	---
	48-60	0.0-2.0	8.5-9.0	5-20	8.0-16.0	15-35
Gooseflats	0-7	1.0-6.0	9.1-11.0	5-20	16.0-32.0	15-35
	7-28	1.0-3.0	8.5-9.0	5-20	8.0-16.0	15-35
	28-60	0.0-2.0	8.5-9.0	5-20	8.0-16.0	15-35
194:						
Growden	0-4	10-30	5.6-6.0	0	0	0
	4-10	10-30	5.6-6.0	0	0	0
	10-22	2.0-7.0	5.6-6.5	0	0	0
	22-60	1.0-5.0	5.6-6.5	0	0	0
195:						
Hadencreek	0-13	8.0-13	6.6-7.3	0	0	0
	13-32	5.0-10	6.6-7.8	0-5	0	0
	32-60	5.0-9.0	7.4-8.4	15-35	0.0-4.0	0
196:						
Haley	0-12	1.0-4.0	6.6-7.3	0	0	0
	12-28	1.0-3.0	6.6-7.3	0	0	0
	28-40	1.0-2.0	6.6-7.8	0	0	0
	40-60	1.0-2.0	6.6-7.8	0	0	0
197:						
Haley	0-12	1.0-4.0	6.6-7.3	0	0	0
	12-28	1.0-3.0	6.6-7.3	0	0	0
	28-40	1.0-2.0	6.6-7.8	0	0	0
	40-60	1.0-2.0	6.6-7.8	0	0	0
198:						
Haley	0-12	1.0-4.0	6.6-7.3	0	0	0
	12-28	1.0-3.0	6.6-7.3	0	0	0
	28-40	1.0-2.0	6.6-7.8	0	0	0
	40-60	1.0-2.0	6.6-7.8	0	0	0
199:						
Hallcreek	0-11	10-30	6.1-7.3	0	0	0
	11-17	1.0-3.0	6.1-7.3	0	0	0
	17-60	0.0-2.0	5.6-7.3	0	0	0
200:						
Haploxerolls	0-3	2.0-8.0	6.6-7.8	0	0	0
	3-11	2.0-8.0	6.6-7.8	0	0	0
	11-60	1.0-9.0	6.6-8.4	0-5	0.0-2.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
201:						
Hartill	0-6	10-30	6.1-7.3	0	0	0
	6-14	10-30	6.1-7.3	0	0	0
	14-30	2.0-5.0	6.1-7.3	0	0	0
	30-39	1.0-3.0	6.1-7.3	0	0	0
	39-43	---	---	---	---	---
202:						
Hartill	0-6	10-30	6.1-7.3	0	0	0
	6-14	10-30	6.1-7.3	0	0	0
	14-30	2.0-5.0	6.1-7.3	0	0	0
	30-39	1.0-3.0	6.1-7.3	0	0	0
	39-43	---	---	---	---	---
203:						
Hellgate	0-12	3.0-8.0	6.1-7.3	0	0	0
	12-25	2.0-6.0	6.1-7.3	0	0	0
	25-36	0.0-3.0	6.6-7.8	0	0	0
	36-60	0.0-2.0	6.6-7.8	0	0	0
204:						
Hellgate	0-9	4.0-9.0	6.1-7.3	0	0	0
	9-22	2.0-6.0	6.1-7.3	0	0	0
	22-50	0.0-3.0	6.6-7.8	0	0	0
	50-60	0.0-2.0	6.6-7.8	0	0	0
205:						
Henneway	0-10	10-30	6.6-7.3	0	0	0
	10-28	4.0-11	6.1-7.3	0	0	0
	28-49	5.0-11	6.1-7.3	0	0	0
	49-59	4.0-10	6.1-7.3	0	0	0
	59-63	---	---	---	---	---
206:						
Henneway	0-10	10-30	6.6-7.3	0	0	0
	10-28	4.0-11	6.1-7.3	0	0	0
	28-49	5.0-11	6.1-7.3	0	0	0
	49-59	4.0-10	6.1-7.3	0	0	0
	59-63	---	---	---	---	---
207:						
Henneway	0-13	10-30	6.6-7.3	0	0	0
	13-22	4.0-11	6.1-7.3	0	0	0
	22-45	5.0-11	6.1-7.3	0	0	0
	45-58	4.0-10	6.1-7.3	0	0	0
	58-62	---	---	---	---	---
208:						
Heytou	0-4	1.0-5.0	6.6-7.8	0	0	0
	4-30	1.0-4.0	6.6-7.8	0	0	0
	30-60	0.0-2.0	7.4-8.4	1-5	0.0-2.0	0
Stubblefield	0-9	2.0-6.0	6.6-7.8	0	0	0
	9-24	0.0-2.0	6.6-7.8	0	0	0
	24-28	---	---	---	---	---
	28-60	6.0-16	7.4-9.0	1-10	0.0-2.0	0
209:						
Histosols	0-4	70-120	5.6-6.5	0	0	0
	4-20	40-80	5.6-6.5	0	0	0
	20-32	20-40	6.1-7.3	0	0	0
	32-60	20-30	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
210:						
Hobohill	0-3	4.0-9.0	6.1-7.3	0	0	0
	3-18	2.0-5.0	6.1-7.3	0	0	0
	18-30	0.0-2.0	6.1-7.3	0	0	0
	30-60	0.0-2.0	6.1-7.3	0	0	0
211:						
Hobohill	0-3	3.0-11	6.1-7.3	0	0	0
	3-14	1.0-5.0	6.1-7.3	0	0	0
	14-23	1.0-3.0	6.1-7.3	0	0	0
	23-60	0.0-2.0	6.1-7.3	0	0	0
212:						
Hodgson	0-3	6.0-12	6.1-7.3	0	0	0
	3-47	17-22	6.6-7.8	0	0	0
	47-60	12-20	7.4-8.4	5-15	0.0-4.0	0
213:						
Hodgson	0-3	6.0-12	6.1-7.3	0	0	0
	3-47	17-22	6.6-7.8	0	0	0
	47-60	12-20	7.4-8.4	5-15	0.0-4.0	0
214:						
Hodgson	0-3	6.0-12	6.1-7.3	0	0	0
	3-47	17-22	6.6-7.8	0	0	0
	47-60	12-20	7.4-8.4	5-15	0.0-4.0	0
215:						
Hodgson	0-3	6.0-12	6.1-7.3	0	0	0
	3-47	17-22	6.6-7.8	0	0	0
	47-60	12-20	7.4-8.4	5-15	0.0-4.0	0
216:						
Hudnut	0-2	1.0-6.0	6.1-7.3	0	0	0
	2-50	1.0-4.0	6.1-7.3	0	0	0
	50-60	1.0-2.0	6.1-7.3	0	0	0
217:						
Hudnut	0-2	1.0-6.0	6.1-7.3	0	0	0
	2-50	1.0-4.0	6.1-7.3	0	0	0
	50-60	1.0-2.0	6.1-7.3	0	0	0
218:						
Hunters	0-10	7.0-12	6.1-7.3	0	0	0
	10-28	5.0-9.0	6.6-7.8	0	0	0
	28-60	5.0-8.0	7.4-8.4	15-30	0.0-2.0	0
219:						
Hunters	0-14	7.0-12	6.1-7.3	0	0	0
	14-24	5.0-9.0	6.6-7.8	0	0	0
	24-60	5.0-8.0	7.4-8.4	15-30	0.0-2.0	0
220:						
Inchelium	0-13	7.0-13	6.6-7.3	0	0	0
	13-42	4.0-9.0	6.6-7.8	0	0	0
	42-51	5.0-9.0	7.4-7.8	0	0	0
	51-60	5.0-9.0	7.4-8.4	5-20	0.0-2.0	0
221:						
Inchelium	0-13	7.0-13	6.6-7.3	0	0	0
	13-42	4.0-9.0	6.6-7.8	0	0	0
	42-51	5.0-9.0	7.4-7.8	0	0	0
	51-60	5.0-9.0	7.4-8.4	5-20	0.0-2.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
222:						
Inkler	0-3	10-30	6.1-7.3	0	0	0
	3-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-31	2.0-5.0	6.1-7.3	0	0	0
	31-60	2.0-4.0	6.1-7.3	0	0	0
223:						
Inkler	0-3	10-30	6.1-7.3	0	0	0
	3-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-31	2.0-5.0	6.1-7.3	0	0	0
	31-60	2.0-4.0	6.1-7.3	0	0	0
224:						
Inkler	0-3	10-30	6.1-7.3	0	0	0
	3-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-31	2.0-5.0	6.1-7.3	0	0	0
	31-60	2.0-4.0	6.1-7.3	0	0	0
225:						
Inkler	0-3	10-30	6.1-7.3	0	0	0
	3-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-31	2.0-5.0	6.1-7.3	0	0	0
	31-60	2.0-4.0	6.1-7.3	0	0	0
Baldknob	0-4	4.0-9.0	6.1-7.3	0	0	0
	4-14	2.0-7.0	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
226:						
Inkler	0-3	10-30	6.1-7.3	0	0	0
	3-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-31	2.0-5.0	6.1-7.3	0	0	0
	31-60	2.0-4.0	6.1-7.3	0	0	0
Baldknob	0-4	4.0-9.0	6.1-7.3	0	0	0
	4-14	2.0-7.0	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
227:						
Inkler	0-3	10-30	6.1-7.3	0	0	0
	3-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-31	2.0-5.0	6.1-7.3	0	0	0
	31-60	2.0-4.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
228:						
Inkler	0-3	10-30	6.1-7.3	0	0	0
	3-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-31	2.0-5.0	6.1-7.3	0	0	0
	31-60	2.0-4.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
228:						
Rock outcrop	0-60	---	---	---	---	---
229:						
Jimcreek	0-19	8.0-13	6.6-7.3	0	0	0
	19-46	12-19	6.6-7.3	0	0	0
	46-60	14-21	6.6-7.3	0	0	0
230:						
Johntom	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	1.0-6.0	6.1-7.3	0	0	0
	11-16	1.0-4.0	6.1-7.3	0	0	0
	16-20	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
Rubble land	0-60	---	---	---	---	---
231:						
Karamin	0-6	2.0-4.0	6.1-7.3	0	0	0
	6-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	1.0-3.0	6.1-7.3	0	0	0
	28-60	1.0-3.0	6.1-7.3	0	0	0
232:						
Karamin	0-6	2.0-4.0	6.1-7.3	0	0	0
	6-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	1.0-3.0	6.1-7.3	0	0	0
	28-60	1.0-3.0	6.1-7.3	0	0	0
233:						
Karamin	0-6	2.0-4.0	6.1-7.3	0	0	0
	6-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	1.0-3.0	6.1-7.3	0	0	0
	28-60	1.0-3.0	6.1-7.3	0	0	0
234:						
Kartar	0-6	2.0-6.0	6.6-7.3	0	0	0
	6-22	1.0-4.0	6.6-7.3	0	0	0
	22-42	1.0-3.0	6.6-7.3	0	0	0
	42-60	1.0-2.0	6.6-7.3	0	0	0
235:						
Kellerbutte	0-5	10-30	6.1-7.3	0	0	0
	5-17	10-30	6.1-7.3	0	0	0
	17-60	1.0-4.0	6.1-7.3	0	0	0
236:						
Kellerbutte	0-7	10-30	6.1-7.3	0	0	0
	7-17	10-30	6.1-7.3	0	0	0
	17-60	1.0-4.0	6.1-7.3	0	0	0
237:						
Kenotrail	0-9	6.0-13	6.1-7.3	0	0	0
	9-32	9.0-19	6.1-7.3	0	0	0
	32-42	---	---	---	---	---
238:						
Kewach	0-4	9.0-15	6.1-7.3	0	0	0
	4-10	5.0-13	6.1-7.3	0	0	0
	10-29	7.0-12	6.6-7.8	0	0	0
	29-42	10-14	6.6-7.8	0-5	0	0
	42-60	6.0-13	7.4-8.4	5-10	0.0-2.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
239:						
Kewach	0-4	9.0-15	6.1-7.3	0	0	0
	4-10	5.0-13	6.1-7.3	0	0	0
	10-29	7.0-12	6.6-7.8	0	0	0
	29-42	10-14	6.6-7.8	0-5	0	0
	42-60	6.0-13	7.4-8.4	5-10	0.0-2.0	0
240:						
Kewach	0-4	9.0-15	6.1-7.3	0	0	0
	4-10	5.0-13	6.1-7.3	0	0	0
	10-29	7.0-12	6.6-7.8	0	0	0
	29-42	10-14	6.6-7.8	0-5	0	0
	42-60	6.0-13	7.4-8.4	5-10	0.0-2.0	0
241:						
Kewach	0-4	9.0-15	6.1-7.3	0	0	0
	4-10	5.0-13	6.1-7.3	0	0	0
	10-29	7.0-12	6.6-7.8	0	0	0
	29-42	10-14	6.6-7.8	0-5	0	0
	42-60	6.0-13	7.4-8.4	5-15	0.0-2.0	0
242:						
Kiehl	0-10	10-30	6.1-7.3	0	0	0
	10-21	2.0-7.0	6.1-7.3	0	0	0
	21-29	0.0-2.0	6.1-7.3	0	0	0
	29-60	0.0-2.0	6.1-7.3	0	0	0
243:						
Kiehl	0-10	10-30	6.1-7.3	0	0	0
	10-21	2.0-7.0	6.1-7.3	0	0	0
	21-29	0.0-2.0	6.1-7.3	0	0	0
	29-60	0.0-2.0	6.1-7.3	0	0	0
244:						
Kiehl	0-10	10-30	6.1-7.3	0	0	0
	10-21	2.0-7.0	6.1-7.3	0	0	0
	21-29	0.0-2.0	6.1-7.3	0	0	0
	29-60	0.0-2.0	6.1-7.3	0	0	0
245:						
Kiehl	0-14	10-30	6.1-7.3	0	0	0
	14-23	0.0-2.0	6.1-7.3	0	0	0
	23-60	0.0-2.0	6.1-7.3	0	0	0
246:						
Kiehl	0-14	10-30	6.1-7.3	0	0	0
	14-23	0.0-2.0	6.1-7.3	0	0	0
	23-60	0.0-2.0	6.1-7.3	0	0	0
247:						
Kiehl	0-14	10-30	6.1-7.3	0	0	0
	14-23	0.0-2.0	6.1-7.3	0	0	0
	23-60	0.0-2.0	6.1-7.3	0	0	0
248:						
Koepke	0-22	10-30	6.1-7.3	0	0	0
	22-40	2.0-7.0	6.1-7.3	0	0	0
	40-60	1.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
249:						
Lakesol	0-10	6.0-9.0	6.6-7.3	0	0	0
	10-37	4.0-6.0	6.6-7.8	0	0	0
	37-60	3.0-5.0	6.6-7.8	0-5	0	0
250:						
Lithic Xerorthents	0-2	6.0-15	6.1-7.3	0	0	0
	2-7	4.0-9.0	6.1-7.3	0	0	0
	7-11	---	---	---	---	---
Baldknob	0-4	4.0-9.0	6.1-7.3	0	0	0
	4-14	2.0-7.0	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
251:						
Lithic Xerorthents	0-2	6.0-15	6.1-7.3	0	0	0
	2-7	4.0-9.0	6.1-7.3	0	0	0
	7-11	---	---	---	---	---
Baldknob	0-4	4.0-9.0	6.1-7.3	0	0	0
	4-14	2.0-7.0	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
252:						
Logy	0-10	2.0-6.0	6.6-7.8	0	0	0
	10-24	1.0-6.0	6.6-7.8	0	0	0
	24-60	0.0-2.0	7.4-8.4	0	0.0-2.0	0
253:						
Loony	0-3	10-30	6.1-6.5	0	0	0
	3-17	10-30	6.1-6.5	0	0	0
	17-28	1.0-5.0	6.6-7.3	0	0	0
	28-60	1.0-4.0	6.6-7.3	---	---	---
254:						
Lostcreek	0-11	6.0-14	6.1-7.3	0	0	0
	11-27	4.0-9.0	6.1-7.3	0	0	0
	27-60	2.0-7.0	6.1-7.3	0	0	0
255:						
Louiecreek	0-13	2.0-9.0	6.1-7.3	0	0	0
	13-20	2.0-7.0	6.1-7.3	0	0	0
	20-32	2.0-5.0	6.1-7.3	0	0	0
	32-60	1.0-3.0	6.1-7.3	0	0	0
256:						
Louploup	0-6	10-30	6.1-7.3	0	0	0
	6-22	10-30	6.1-7.3	0	0	0
	22-46	1.0-3.0	6.1-7.3	0	0	0
	46-60	1.0-2.0	6.1-7.3	0	0	0
257:						
Louploup	0-6	10-30	6.1-7.3	0	0	0
	6-22	10-30	6.1-7.3	0	0	0
	22-46	1.0-3.0	6.1-7.3	0	0	0
	46-60	1.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
258:						
Lynxcreek	0-9	10-30	6.1-7.3	0	0	0
	9-36	5.0-12	6.1-7.3	0	0	0
	36-60	4.0-10	6.1-7.3	0	0	0
259:						
Malott	0-12	2.0-6.0	6.6-7.8	0	0	0
	12-36	2.0-6.0	7.4-7.8	0	0	0
	36-49	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	49-60	---	8.5-9.0	---	---	---
260:						
Malott	0-12	2.0-6.0	6.6-7.8	0	0	0
	12-36	2.0-6.0	7.4-7.8	0	0	0
	36-49	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	49-60	---	8.5-9.0	---	---	---
261:						
Malott	0-12	2.0-6.0	6.6-7.8	0	0	0
	12-36	2.0-6.0	7.4-7.8	0	0	0
	36-49	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	49-60	---	8.5-9.0	---	---	---
262:						
Malott	0-6	2.0-6.0	6.6-7.8	0	0	0
	6-11	2.0-6.0	6.6-7.8	0	0	0
	11-30	2.0-6.0	7.4-7.8	0	0	0
	30-53	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	53-60	---	8.5-9.0	---	---	---
263:						
Malott	0-6	2.0-6.0	6.6-7.8	0	0	0
	6-11	2.0-6.0	6.6-7.8	0	0	0
	11-30	2.0-6.0	7.4-7.8	0	0	0
	30-53	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	53-60	---	8.5-9.0	---	---	---
264:						
Malott	0-6	2.0-6.0	6.6-7.8	0	0	0
	6-11	2.0-6.0	6.6-7.8	0	0	0
	11-30	2.0-6.0	7.4-7.8	0	0	0
	30-53	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	53-60	---	8.5-9.0	---	---	---
Rock outcrop	0-60	---	---	---	---	---
265:						
Malott	0-6	2.0-6.0	6.6-7.8	0	0	0
	6-11	2.0-6.0	6.6-7.8	0	0	0
	11-30	2.0-6.0	7.4-7.8	0	0	0
	30-53	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	53-60	---	8.5-9.0	---	---	---
Rock outcrop	0-60	---	---	---	---	---
266:						
Malott	0-6	2.0-6.0	6.6-7.8	0	0	0
	6-11	2.0-6.0	6.6-7.8	0	0	0
	11-30	2.0-6.0	7.4-7.8	0	0	0
	30-53	1.0-4.0	7.4-8.4	20-35	0.0-4.0	0
	53-60	---	8.5-9.0	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
266:						
Torriorthents	0-6	1.0-4.0	7.4-8.4	1-5	0.0-2.0	0
	6-60	1.0-4.0	7.9-9.0	5-15	0.0-4.0	0-2
267:						
Manley	0-12	10-30	5.6-7.3	0	0	0
	12-17	10-30	5.6-7.3	0	0	0
	17-38	0.0-2.0	5.6-7.3	0	0	0
	38-60	0.0-2.0	5.6-7.3	0	0	0
268:						
Manley	0-12	10-30	5.6-7.3	0	0	0
	12-17	10-30	5.6-7.3	0	0	0
	17-38	0.0-2.0	5.6-7.3	0	0	0
	38-60	0.0-2.0	5.6-7.3	0	0	0
269:						
Manley	0-12	10-30	5.6-7.3	0	0	0
	12-17	10-30	5.6-7.3	0	0	0
	17-38	0.0-2.0	5.6-7.3	0	0	0
	38-60	0.0-2.0	5.6-7.3	0	0	0
270:						
Manley	0-12	10-30	5.6-7.3	0	0	0
	12-17	10-30	5.6-7.3	0	0	0
	17-38	0.0-2.0	5.6-7.3	0	0	0
	38-60	0.0-2.0	5.6-7.3	0	0	0
Codylake	0-5	10-30	5.6-7.3	0	0	0
	5-24	10-30	5.6-7.3	0	0	0
	24-43	1.0-3.0	5.6-7.3	0	0	0
	43-53	---	---	---	---	---
271:						
Manley	0-12	10-30	5.6-7.3	0	0	0
	12-17	10-30	5.6-7.3	0	0	0
	17-38	0.0-2.0	5.6-7.3	0	0	0
	38-60	0.0-2.0	5.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
272:						
Manley	0-12	10-30	5.6-7.3	0	0	0
	12-17	10-30	5.6-7.3	0	0	0
	17-38	0.0-2.0	5.6-7.3	0	0	0
	38-60	0.0-2.0	5.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
273:						
Martella	0-3	10-30	6.1-7.3	0	0	0
	3-23	10-30	6.1-7.3	0	0	0
	23-46	12-22	6.1-7.8	0	0	0
	46-60	12-22	6.6-7.8	0	0	0
274:						
Martella	0-10	10-30	6.1-7.3	0	0	0
	10-46	12-22	6.1-7.8	0	0	0
	46-60	12-22	6.6-7.8	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
275:						
Martella	0-10	10-30	6.1-7.3	0	0	0
	10-46	12-22	6.1-7.8	0	0	0
	46-60	12-22	6.6-7.8	0	0	0
276:						
Medisaprists	0-10	60-95	6.1-7.3	0	0	0
	10-60	45-75	6.1-7.3	0	0	0
277:						
Merkel	0-6	10-30	5.6-7.3	0	0	0
	6-29	10-30	5.6-7.3	0	0	0
	29-35	1.0-3.0	5.6-7.3	0	0	0
	35-60	1.0-3.0	5.6-7.3	0	0	0
278:						
Merkel	0-6	10-30	5.6-7.3	0	0	0
	6-29	10-30	5.6-7.3	0	0	0
	29-35	1.0-3.0	5.6-7.3	0	0	0
	35-60	1.0-3.0	5.6-7.3	0	0	0
279:						
Merkel	0-6	10-30	5.6-7.3	0	0	0
	6-29	10-30	5.6-7.3	0	0	0
	29-35	1.0-3.0	5.6-7.3	0	0	0
	35-60	1.0-3.0	5.6-7.3	0	0	0
280:						
Merkel	0-3	10-30	5.6-7.3	0	0	0
	3-21	10-30	5.6-7.3	0	0	0
	21-60	1.0-3.0	5.6-7.3	0	0	0
281:						
Merkel	0-3	10-30	5.6-7.3	0	0	0
	3-21	10-30	5.6-7.3	0	0	0
	21-60	1.0-3.0	5.6-7.3	0	0	0
282:						
Mineral	0-6	7.0-14	5.6-7.3	0	0	0
	6-12	3.0-9.0	5.6-7.3	0	0	0
	12-23	2.0-6.0	6.1-7.3	0	0	0
	23-27	---	---	---	---	---
283:						
Mineral	0-6	7.0-14	5.6-7.3	0	0	0
	6-12	3.0-9.0	5.6-7.3	0	0	0
	12-23	2.0-6.0	6.1-7.3	0	0	0
	23-27	---	---	---	---	---
284:						
Mineral	0-6	7.0-14	5.6-7.3	0	0	0
	6-12	3.0-9.0	5.6-7.3	0	0	0
	12-23	2.0-6.0	6.1-7.3	0	0	0
	23-27	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
285:						
Mineral	0-6	7.0-14	5.6-7.3	0	0	0
	6-12	3.0-9.0	5.6-7.3	0	0	0
	12-23	2.0-6.0	6.1-7.3	0	0	0
	23-27	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
285:						
Rock outcrop	0-60	---	---	---	---	---
286:						
Mineral	0-6	7.0-14	5.6-7.3	0	0	0
	6-12	3.0-9.0	5.6-7.3	0	0	0
	12-23	2.0-6.0	6.1-7.3	0	0	0
	23-27	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
287:						
Mineral	0-8	7.0-14	5.6-7.3	0	0	0
	8-23	3.0-9.0	5.6-7.3	0	0	0
	23-27	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
288:						
Mitchellpoint	0-7	10-30	6.1-7.3	0	0	0
	7-14	10-30	6.1-7.3	0	0	0
	14-20	4.0-9.0	6.1-7.3	0	0	0
	20-26	5.0-8.0	6.1-7.3	0	0	0
	26-60	0.0-2.0	6.1-7.3	0	0	0
289:						
Monse	0-14	4.0-9.0	6.6-7.8	0	0	0
	14-19	4.0-7.0	7.4-8.4	0-5	0.0-2.0	0
	19-40	7.0-10	7.4-8.4	0-5	0.0-2.0	0
	40-60	6.0-9.0	7.9-9.0	5-20	0.0-4.0	0-2
290:						
Morical	0-13	5.0-13	6.6-7.3	0	0	0
	13-22	9.0-13	6.6-7.8	0	0	0
	22-32	---	---	---	---	---
291:						
Morical	0-13	5.0-13	6.6-7.3	0	0	0
	13-22	9.0-13	6.6-7.8	0	0	0
	22-32	---	---	---	---	---
292:						
Morical	0-17	5.0-13	6.6-7.3	0	0	0
	17-33	9.0-13	6.6-7.8	0	0	0
	33-43	---	---	---	---	---
293:						
Moscow	0-3	10-30	5.6-7.3	0	0	0
	3-11	10-30	5.6-7.3	0	0	0
	11-34	1.0-2.0	5.6-7.3	0	0	0
	34-44	---	---	---	---	---
294:						
Moscow	0-11	10-30	5.6-7.3	0	0	0
	11-34	1.0-2.0	5.6-7.3	0	0	0
	34-44	---	---	---	---	---
295:						
Moses	0-13	10-30	5.6-7.3	0	0	0
	13-20	2.0-7.0	5.6-7.3	0	0	0
	20-34	2.0-5.0	5.1-7.3	0	0	0
	34-44	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
296:						
Moses	0-13	10-30	5.6-7.3	0	0	0
	13-20	2.0-7.0	5.6-7.3	0	0	0
	20-34	2.0-5.0	5.1-7.3	0	0	0
	34-44	---	---	---	---	---
297:						
Moses	0-8	10-30	5.6-7.3	0	0	0
	8-22	2.0-7.0	5.6-7.3	0	0	0
	22-30	2.0-5.0	5.6-7.3	0	0	0
	30-40	---	---	---	---	---
298:						
Moses	0-8	10-30	5.6-7.3	0	0	0
	8-22	2.0-7.0	5.6-7.3	0	0	0
	22-30	2.0-5.0	5.6-7.3	0	0	0
	30-40	---	---	---	---	---
299:						
Narcisse	0-25	5.0-11	6.1-7.3	0	0	0
	25-42	3.0-7.0	6.1-7.3	0	0	0
	42-60	1.0-5.0	6.1-7.3	0	0	0
300:						
Narcisse	0-21	5.0-11	6.1-7.3	0	0	0
	21-31	3.0-7.0	6.1-7.3	0	0	0
	31-46	2.0-9.0	6.1-7.3	0	0	0
	46-60	1.0-5.0	6.1-7.3	0	0	0
301:						
Nespelem	0-12	5.0-15	6.1-7.3	0	0	0
	12-22	5.0-10	6.6-7.8	0	0	0
	22-24	---	---	---	---	---
	24-60	5.0-10	7.9-9.0	5-20	2.0-8.0	0-4
302:						
Nespelem	0-19	5.0-15	6.1-7.3	0	0	0
	19-30	5.0-10	6.6-7.8	0	0	0
	30-32	---	---	---	---	---
	32-60	5.0-10	7.9-9.0	5-20	2.0-8.0	0-4
Nespelem	0-8	5.0-15	6.1-7.3	0	0	0
	8-36	5.0-10	6.6-7.8	0	0	0
	36-38	---	---	---	---	---
	38-60	5.0-10	7.9-9.0	5-20	2.0-8.0	0-4
303:						
Nespelem	0-12	5.0-15	6.1-7.3	0	0	0
	12-22	5.0-10	6.6-7.8	0	0	0
	22-24	---	---	---	---	---
	24-60	5.0-10	7.9-9.0	5-20	2.0-8.0	0-4
Emdent	0-16	10-30	8.5-9.6	5-10	4.0-8.0	15-30
	16-60	10-30	7.4-9.0	1-5	2.0-4.0	5-15
304:						
Nespelem	0-12	5.0-15	6.1-7.3	0	0	0
	12-22	5.0-10	6.6-7.8	0	0	0
	22-24	---	---	---	---	---
	24-60	5.0-10	7.9-9.0	5-20	2.0-8.0	0-4
Typic Xerorthents	0-9	2.0-8.0	7.4-7.8	0-5	0	0
	9-60	2.0-8.0	7.4-7.8	5-20	2.0-8.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
305:						
Neuske	0-5	5.0-9.0	6.1-7.3	0	0	0
	5-24	4.0-10	6.1-7.3	0	0	0
	24-39	5.0-8.0	6.1-7.3	0	0	0
	39-50	5.0-10	6.1-7.8	0	0	0
	50-60	4.0-8.0	6.6-7.8	0	0	0
306:						
Neuske	0-5	5.0-9.0	6.1-7.3	0	0	0
	5-24	4.0-10	6.1-7.3	0	0	0
	24-39	5.0-8.0	6.1-7.3	0	0	0
	39-50	5.0-10	6.1-7.8	0	0	0
	50-60	4.0-8.0	6.6-7.8	0	0	0
307:						
Nevine	0-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-28	3.0-13	6.1-7.3	0	0	0
	28-41	2.0-9.0	5.6-7.3	0	0	0
	41-60	1.0-3.0	5.6-7.3	0	0	0
Nevine	0-7	10-30	6.1-7.3	0	0	0
	7-15	10-30	6.1-7.3	0	0	0
	15-25	3.0-13	6.1-7.3	0	0	0
	25-38	2.0-9.0	5.6-7.3	0	0	0
	38-60	1.0-3.0	5.6-7.3	0	0	0
308:						
Nevine	0-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-28	3.0-13	6.1-7.3	0	0	0
	28-41	2.0-9.0	5.6-7.3	0	0	0
	41-60	1.0-3.0	5.6-7.3	0	0	0
Nevine	0-7	10-30	6.1-7.3	0	0	0
	7-15	10-30	6.1-7.3	0	0	0
	15-25	3.0-13	6.1-7.3	0	0	0
	25-38	2.0-9.0	5.6-7.3	0	0	0
	38-60	1.0-3.0	5.6-7.3	0	0	0
309:						
Nevine	0-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-28	3.0-13	6.1-7.3	0	0	0
	28-41	2.0-9.0	5.6-7.3	0	0	0
	41-60	1.0-3.0	5.6-7.3	0	0	0
Nevine	0-7	10-30	6.1-7.3	0	0	0
	7-15	10-30	6.1-7.3	0	0	0
	15-25	3.0-13	6.1-7.3	0	0	0
	25-38	2.0-9.0	5.6-7.3	0	0	0
	38-60	1.0-3.0	5.6-7.3	0	0	0
310:						
Nevine	0-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-28	3.0-13	6.1-7.3	0	0	0
	28-41	2.0-9.0	5.6-7.3	0	0	0
	41-60	1.0-3.0	5.6-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
310:						
Nevine	0-7	10-30	6.1-7.3	0	0	0
	7-15	10-30	6.1-7.3	0	0	0
	15-25	3.0-13	6.1-7.3	0	0	0
	25-38	2.0-9.0	5.6-7.3	0	0	0
	38-60	1.0-3.0	5.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
311:						
Nevine	0-9	10-30	6.1-7.3	0	0	0
	9-18	10-30	6.1-7.3	0	0	0
	18-28	3.0-13	6.1-7.3	0	0	0
	28-41	2.0-9.0	5.6-7.3	0	0	0
	41-60	1.0-3.0	5.6-7.3	0	0	0
Nevine	0-7	10-30	6.1-7.3	0	0	0
	7-15	10-30	6.1-7.3	0	0	0
	15-25	3.0-13	6.1-7.3	0	0	0
	25-38	2.0-9.0	5.6-7.3	0	0	0
	38-60	1.0-3.0	5.6-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
312:						
Newbell	0-11	10-30	6.1-7.3	0	0	0
	11-21	2.0-4.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
313:						
Newbell	0-11	10-30	6.1-7.3	0	0	0
	11-21	2.0-4.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
314:						
Newbell	0-11	10-30	6.1-7.3	0	0	0
	11-21	2.0-4.0	6.1-7.3	0	0	0
	21-60	1.0-3.0	6.1-7.3	0	0	0
315:						
Northstar	0-10	4.0-10	5.6-6.5	0	0	0
	10-26	2.0-7.0	6.1-7.3	0	0	0
	26-30	---	---	---	---	---
316:						
Northstar	0-10	4.0-10	5.6-6.5	0	0	0
	10-26	2.0-7.0	6.1-7.3	0	0	0
	26-30	---	---	---	---	---
317:						
Northstar	0-2	4.0-10	5.6-6.5	0	0	0
	2-18	2.0-7.0	6.1-7.3	0	0	0
	18-27	2.0-5.0	6.1-7.3	0	0	0
	27-31	---	---	---	---	---
Johntom	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	1.0-6.0	6.1-7.3	0	0	0
	11-16	1.0-4.0	6.1-7.3	0	0	0
	16-20	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
318:						
Northstar	0-2	4.0-10	5.6-6.5	0	0	0
	2-18	2.0-7.0	6.1-7.3	0	0	0
	18-27	2.0-5.0	6.1-7.3	0	0	0
	27-31	---	---	---	---	---
Johntom	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	1.0-6.0	6.1-7.3	0	0	0
	11-16	1.0-4.0	6.1-7.3	0	0	0
	16-20	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
319:						
Northstar	0-2	4.0-10	5.6-6.5	0	0	0
	2-18	2.0-7.0	6.1-7.3	0	0	0
	18-27	2.0-5.0	6.1-7.3	0	0	0
	27-31	---	---	---	---	---
Louiecreek	0-13	2.0-9.0	6.1-7.3	0	0	0
	13-20	2.0-7.0	6.1-7.3	0	0	0
	20-32	2.0-5.0	6.1-7.3	0	0	0
	32-60	1.0-3.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
320:						
Northstar	0-2	4.0-10	5.6-6.5	0	0	0
	2-18	2.0-7.0	6.1-7.3	0	0	0
	18-27	2.0-5.0	6.1-7.3	0	0	0
	27-31	---	---	---	---	---
Louiecreek	0-13	2.0-9.0	6.1-7.3	0	0	0
	13-20	2.0-7.0	6.1-7.3	0	0	0
	20-32	2.0-5.0	6.1-7.3	0	0	0
	32-60	1.0-3.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
321:						
Northstar	0-2	4.0-10	5.6-6.5	0	0	0
	2-18	2.0-7.0	6.1-7.3	0	0	0
	18-27	2.0-5.0	6.1-7.3	0	0	0
	27-31	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
322:						
Ohscow	0-4	10-30	6.1-7.3	0	0	0
	4-11	10-30	6.1-7.3	0	0	0
	11-27	1.0-3.0	6.1-7.3	0	0	0
	27-46	1.0-3.0	6.1-7.3	0	0	0
	46-60	0.0-2.0	6.1-7.3	0	0	0
323:						
Ohscow	0-4	10-30	6.1-7.3	0	0	0
	4-11	10-30	6.1-7.3	0	0	0
	11-27	1.0-3.0	6.1-7.3	0	0	0
	27-46	1.0-3.0	6.1-7.3	0	0	0
	46-60	0.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
324:						
Ohscow	0-5	10-30	6.1-7.3	0	0	0
	5-14	10-30	6.1-7.3	0	0	0
	14-25	1.0-3.0	6.1-7.3	0	0	0
	25-39	1.0-3.0	6.1-7.3	0	0	0
	39-60	0.0-2.0	6.1-7.3	0	0	0
325:						
Ohscow	0-5	10-30	6.1-7.3	0	0	0
	5-14	10-30	6.1-7.3	0	0	0
	14-25	1.0-3.0	6.1-7.3	0	0	0
	25-39	1.0-3.0	6.1-7.3	0	0	0
	39-60	0.0-2.0	6.1-7.3	0	0	0
326:						
Okanogan	0-14	2.0-9.0	6.6-7.8	0	0	0
	14-42	1.0-4.0	6.6-7.8	0-5	0	0
	42-60	1.0-4.0	7.4-8.4	0-5	0.0-2.0	0
327:						
Omak	0-10	30-50	6.1-7.3	0	0	0
	10-26	15-30	6.1-7.3	0	0	0
	26-38	20-30	6.6-7.3	0	0	0
	38-45	---	7.4-8.4	---	---	---
	45-60	---	7.9-9.0	---	---	---
328:						
Owhi	0-12	2.0-4.0	6.1-7.3	0	0	0
	12-20	1.0-3.0	6.1-7.3	0	0	0
	20-26	1.0-2.0	6.1-7.3	0	0	0
	26-60	0.0-2.0	6.6-7.8	0	0	0
329:						
Owhi	0-6	3.0-6.0	6.1-7.3	0	0	0
	6-23	2.0-4.0	6.1-7.3	0	0	0
	23-60	0.0-2.0	6.6-7.8	0	0	0
330:						
Owhi	0-9	2.0-5.0	6.1-6.5	0	0	0
	9-18	1.0-2.0	6.1-7.3	0	0	0
	18-60	0.0-2.0	6.6-7.8	0	0	0
Haley	0-10	1.0-4.0	6.6-7.3	0	0	0
	10-24	1.0-3.0	6.6-7.3	0	0	0
	24-30	1.0-2.0	6.6-7.8	0	0	0
	30-60	1.0-2.0	6.6-7.8	0	0	0
331:						
Oxerine	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-28	5.0-15	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
332:						
Oxerine	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-28	5.0-15	6.1-7.3	0	0	0
	28-32	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
333:						
Oxerine	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-28	5.0-15	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
334:						
Oxerine	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-28	5.0-15	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
335:						
Oxerine	0-5	10-30	6.1-7.3	0	0	0
	5-20	10-30	6.1-7.3	0	0	0
	20-28	5.0-15	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
336:						
Parmenter	0-4	10-30	6.1-7.3	0	0	0
	4-16	10-30	6.1-7.3	0	0	0
	16-60	0.0-2.0	6.1-7.3	0	0	0
337:						
Parmenter	0-4	10-30	6.1-7.3	0	0	0
	4-16	10-30	6.1-7.3	0	0	0
	16-60	0.0-2.0	6.1-7.3	0	0	0
338:						
Parmenter	0-4	10-30	6.1-7.3	0	0	0
	4-16	10-30	6.1-7.3	0	0	0
	16-60	0.0-2.0	6.1-7.3	0	0	0
339:						
Parmenter	0-5	10-30	6.1-7.3	0	0	0
	5-15	10-30	6.1-7.3	0	0	0
	15-60	0.0-2.0	6.1-7.3	0	0	0
340:						
Peshastin	0-10	1.0-5.0	6.6-7.8	0	0	0
	10-21	1.0-3.0	6.6-7.8	0	0	0
	21-60	0.0-2.0	7.4-9.0	15-35	0.0-2.0	0
341:						
Peshastin	0-10	1.0-5.0	6.6-7.8	0	0	0
	10-21	1.0-3.0	6.6-7.8	0	0	0
	21-60	0.0-2.0	7.4-9.0	15-35	0.0-2.0	0
342:						
Peshastin	0-8	1.0-5.0	6.6-7.8	0	0	0
	8-22	1.0-3.0	6.6-7.8	0	0	0
	22-60	0.0-2.0	7.4-9.0	15-35	0.0-2.0	0
343:						
Phoebe	0-11	5.0-8.0	6.1-7.3	0	0	0
	11-47	3.0-6.0	6.1-7.3	0	0	0
	47-60	0.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
344:						
Phoebe	0-11	5.0-8.0	6.1-7.3	0	0	0
	11-47	3.0-6.0	6.1-7.3	0	0	0
	47-60	0.0-2.0	6.1-7.3	0	0	0
345:						
Phoebe	0-11	5.0-8.0	6.1-7.3	0	0	0
	11-47	3.0-6.0	6.1-7.3	0	0	0
	47-60	0.0-2.0	6.1-7.3	0	0	0
346:						
Phoebe	0-11	5.0-8.0	6.1-7.3	0	0	0
	11-47	3.0-6.0	6.1-7.3	0	0	0
	47-60	0.0-2.0	6.1-7.3	0	0	0
347:						
Phoebe	0-10	5.0-8.0	6.1-7.3	0	0	0
	10-27	3.0-6.0	6.1-7.3	0	0	0
	27-36	3.0-5.0	6.1-7.3	0	0	0
	36-60	0.0-2.0	6.1-7.3	0	0	0
348:						
Phoebe	0-10	5.0-8.0	6.1-7.3	0	0	0
	10-27	3.0-6.0	6.1-7.3	0	0	0
	27-36	3.0-5.0	6.1-7.3	0	0	0
	36-60	0.0-2.0	6.1-7.3	0	0	0
349:						
Phoebe	0-10	5.0-8.0	6.1-7.3	0	0	0
	10-27	3.0-6.0	6.1-7.3	0	0	0
	27-36	3.0-5.0	6.1-7.3	0	0	0
	36-60	0.0-2.0	6.1-7.3	0	0	0
350:						
Phoebe	0-16	5.0-8.0	6.1-7.3	0	0	0
	16-30	3.0-6.0	6.1-7.3	0	0	0
	30-39	3.0-5.0	6.1-7.3	0	0	0
	39-60	0.0-2.0	6.1-7.3	0	0	0
Dehart	0-7	2.0-6.0	6.1-7.3	0	0	0
	7-32	2.0-4.0	6.1-7.3	0	0	0
	32-60	1.0-3.0	6.1-7.3	0	0	0
351:						
Picard	0-5	2.0-5.0	6.1-7.3	0	0	0
	5-16	5.0-8.0	6.1-7.3	0	0	0
	16-40	2.0-5.0	6.1-7.3	0	0	0
	40-51	1.0-3.0	6.6-7.8	0	0	0
	51-60	0.0-2.0	6.6-7.8	0	0	0
352:						
Picard	0-5	2.0-5.0	6.1-7.3	0	0	0
	5-16	5.0-8.0	6.1-7.3	0	0	0
	16-40	2.0-5.0	6.1-7.3	0	0	0
	40-51	1.0-3.0	6.6-7.8	0	0	0
	51-60	0.0-2.0	6.6-7.8	0	0	0
353:						
Pits	0-60	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
354:						
Pogue	0-8	2.0-5.0	6.6-7.8	0	0	0
	8-22	1.0-3.0	6.6-7.8	0	0	0
	22-60	1.0-2.0	6.6-8.4	0	0.0-2.0	0
355:						
Pogue	0-8	2.0-5.0	6.6-7.8	0	0	0
	8-22	1.0-3.0	6.6-7.8	0	0	0
	22-60	1.0-2.0	6.6-8.4	0	0.0-2.0	0
356:						
Pogue	0-8	2.0-5.0	6.6-7.8	0	0	0
	8-22	1.0-3.0	6.6-7.8	0	0	0
	22-60	1.0-2.0	6.6-8.4	0	0.0-2.0	0
357:						
Pogue	0-12	2.0-5.0	6.6-7.8	0	0	0
	12-29	1.0-3.0	6.6-7.8	0	0	0
	29-60	1.0-2.0	6.6-8.4	0	0.0-2.0	0
358:						
Pogue	0-7	2.0-5.0	6.6-7.8	0	0	0
	7-21	1.0-3.0	6.6-7.8	0	0	0
	21-60	1.0-3.0	6.6-8.4	0	0.0-2.0	0
359:						
Pogue	0-7	2.0-5.0	6.6-7.8	0	0	0
	7-21	1.0-3.0	6.6-7.8	0	0	0
	21-60	1.0-3.0	6.6-8.4	0	0.0-2.0	0
360:						
Poween	0-12	4.0-11	7.9-9.0	0	0.0-4.0	0-2
	12-30	1.0-7.0	7.9-9.0	5-20	0.0-4.0	0-2
	30-44	1.0-5.0	7.9-9.0	5-20	0.0-4.0	0-2
	44-60	1.0-7.0	7.9-9.0	5-20	0.0-4.0	0-2
361:						
Quincy	0-1	0.0-2.0	6.6-7.8	0	0	0
	1-60	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
362:						
Quincy	0-5	0.0-2.0	6.6-7.8	0	0	0
	5-60	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
363:						
Quincy	0-12	0.0-2.0	6.6-7.8	0	0	0
	12-40	0.0-2.0	6.6-8.4	0-5	0.0-2.0	0
	40-49	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
	49-60	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
364:						
Quincy	0-5	0.0-2.0	6.6-7.8	0	0	0
	5-28	0.0-2.0	6.6-8.4	0-5	0.0-2.0	0
	28-52	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
	52-60	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
365:						
Quincy	0-1	0.0-2.0	6.6-7.8	0	0	0
	1-28	0.0-2.0	6.6-8.4	0-5	0.0-2.0	0
	28-52	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
	52-60	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
366:						
Quincy	0-5	0.0-2.0	6.6-7.8	0	0	0
	5-28	0.0-2.0	6.6-8.4	0-5	0.0-2.0	0
	28-52	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
	52-60	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
367:						
Quincy	0-7	0.0-2.0	6.6-7.8	0	0	0
	7-17	0.0-2.0	6.6-8.4	0-5	0.0-2.0	0
	17-60	0.0-1.0	6.6-8.4	0-5	0.0-2.0	0
Aeneas	0-10	2.0-5.0	6.6-7.8	0	0	0
	10-27	2.0-5.0	6.6-7.8	0	0	0
	27-60	1.0-3.0	6.6-7.8	0	0	0
368:						
Raisio	0-5	6.0-12	6.1-7.3	0	0	0
	5-12	4.0-9.0	6.1-7.3	0	0	0
	12-28	3.0-7.0	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
369:						
Raisio	0-5	6.0-12	6.1-7.3	0	0	0
	5-12	4.0-9.0	6.1-7.3	0	0	0
	12-28	3.0-7.0	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
370:						
Raisio	0-8	6.0-12	6.1-7.3	0	0	0
	8-14	4.0-9.0	6.1-7.3	0	0	0
	14-24	3.0-7.0	6.1-7.3	0	0	0
	24-28	---	---	---	---	---
Rufus	0-7	6.0-12	6.1-7.3	0	0	0
	7-14	6.0-10	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
371:						
Raisio	0-8	6.0-12	6.1-7.3	0	0	0
	8-14	4.0-9.0	6.1-7.3	0	0	0
	14-24	3.0-7.0	6.1-7.3	0	0	0
	24-28	---	---	---	---	---
Rufus	0-7	6.0-12	6.1-7.3	0	0	0
	7-14	6.0-10	6.1-7.3	0	0	0
	14-18	---	---	---	---	---
372:						
Raisio	0-5	6.0-12	6.1-7.3	0	0	0
	5-12	4.0-9.0	6.1-7.3	0	0	0
	12-28	3.0-7.0	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
Rufus	0-5	6.0-12	6.1-7.3	0	0	0
	5-15	6.0-12	6.1-7.3	0	0	0
	15-19	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
373:						
Raisio	0-5	6.0-12	6.1-7.3	0	0	0
	5-12	4.0-9.0	6.1-7.3	0	0	0
	12-28	3.0-7.0	6.1-7.3	0	0	0
	28-32	---	---	---	---	---
Rufus	0-5	6.0-12	6.1-7.3	0	0	0
	5-15	6.0-10	6.1-7.3	0	0	0
	15-19	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
374:						
Raisio	0-11	6.0-12	6.1-7.3	0	0	0
	11-24	3.0-7.0	6.1-7.3	0	0	0
	24-28	---	---	---	---	---
Rufus	0-12	6.0-12	6.1-7.3	0	0	0
	12-16	6.0-10	6.1-7.3	0	0	0
	16-20	---	---	---	---	---
375:						
Raisio	0-11	6.0-12	6.1-7.3	0	0	0
	11-24	3.0-7.0	6.1-7.3	0	0	0
	24-28	---	---	---	---	---
Rufus	0-12	6.0-12	6.1-7.3	0	0	0
	12-16	6.0-10	6.1-7.3	0	0	0
	16-20	---	---	---	---	---
376:						
Ralsen	0-11	3.0-9.0	6.1-7.3	0	0	0
	11-42	3.0-9.0	6.1-7.3	0	0	0
	42-60	1.0-5.0	6.1-7.3	0	0	0
377:						
Ratlake	0-2	7.0-10	9.1-11.0	5-20	16.0-32.0	13-25
	2-18	6.0-10	9.1-11.0	5-20	16.0-32.0	13-25
	18-22	---	---	---	---	---
378:						
Reardan	0-11	16-21	6.1-7.3	0	0	0
	11-22	14-21	6.6-7.3	0	0	0
	22-51	24-30	6.6-8.4	0-5	0.0-2.0	0
	51-60	12-18	7.4-8.4	5-10	0.0-4.0	0
379:						
Reardan	0-11	16-21	6.1-7.3	0	0	0
	11-22	14-21	6.6-7.3	0	0	0
	22-51	24-30	6.6-8.4	0-5	0.0-2.0	0
	51-60	12-18	7.4-8.4	5-10	0.0-4.0	0
380:						
Rebecca	0-16	2.0-8.0	6.6-7.3	0	0	0
	16-36	1.0-4.0	6.6-7.8	0	0	0
	36-60	0.0-2.0	6.6-7.8	0	0	0
381:						
Rebecca	0-15	2.0-8.0	6.6-7.3	0	0	0
	15-45	1.0-4.0	6.6-7.8	0	0	0
	45-60	0.0-2.0	6.6-7.8	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
382:						
Renha	0-2	10-30	6.6-7.3	0	0	0
	2-7	10-30	6.1-7.3	0	0	0
	7-11	4.0-9.0	6.1-6.5	0	0	0
	11-28	10-15	6.6-7.8	0	0	0
	28-32	---	---	---	---	---
383:						
Renha	0-2	10-30	6.6-7.3	0	0	0
	2-7	10-30	6.1-7.3	0	0	0
	7-11	4.0-9.0	6.1-6.5	0	0	0
	11-28	10-15	6.6-7.8	0	0	0
	28-32	---	---	---	---	---
384:						
Renha	0-2	10-30	6.6-7.3	0	0	0
	2-7	10-30	6.1-7.3	0	0	0
	7-11	4.0-9.0	6.1-6.5	0	0	0
	11-28	10-15	6.6-7.8	0	0	0
	28-32	---	---	---	---	---
Oxerine	0-2	10-30	6.6-7.8	0	0	0
	2-9	10-30	6.6-7.8	0	0	0
	9-14	2.0-5.0	6.6-7.8	0	0	0
	14-24	1.0-4.0	6.6-7.8	0	0	0
	24-27	1.0-3.0	7.4-8.4	1-5	0	0
	27-31	---	---	---	---	---
385:						
Republic	0-5	5.0-10	6.1-7.3	0	0	0
	5-11	2.0-6.0	6.1-7.3	0	0	0
	11-38	2.0-4.0	6.1-7.3	0	0	0
	38-60	1.0-3.0	6.1-7.3	0	0	0
386:						
Republic	0-5	5.0-10	6.1-7.3	0	0	0
	5-11	2.0-6.0	6.1-7.3	0	0	0
	11-38	2.0-4.0	6.1-7.3	0	0	0
	38-60	1.0-3.0	6.1-7.3	0	0	0
387:						
Republic	0-5	5.0-10	6.1-7.3	0	0	0
	5-11	2.0-6.0	6.1-7.3	0	0	0
	11-38	2.0-4.0	6.1-7.3	0	0	0
	38-60	1.0-3.0	6.1-7.3	0	0	0
388:						
Resner	0-5	10-30	6.1-7.3	0	0	0
	5-17	10-30	6.1-7.3	0	0	0
	17-60	1.0-2.0	6.1-7.3	0	0	0
389:						
Resner	0-5	10-30	6.1-7.3	0	0	0
	5-17	10-30	6.1-7.3	0	0	0
	17-60	1.0-2.0	6.1-7.3	0	0	0
390:						
Ret	0-8	3.0-11	6.6-7.8	0	0	0
	8-22	2.0-7.0	6.6-7.8	0	0	0
	22-30	2.0-5.0	6.6-7.8	0	0	0
	30-60	1.0-3.0	6.6-7.8	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
391:						
Riverwash	0-60	---	---	---	---	---
392:						
Rock outcrop	0-60	---	---	---	---	---
393:						
Rock outcrop	0-60	---	---	---	---	---
Chumstick	0-5	2.0-6.0	5.6-6.5	0	0	0
	5-12	1.0-3.0	5.6-6.5	0	0	0
	12-16	---	---	---	---	---
394:						
Rock outcrop	0-60	---	---	---	---	---
Chumstick	0-5	2.0-6.0	5.6-6.5	0	0	0
	5-12	1.0-3.0	5.6-6.5	0	0	0
	12-16	---	---	---	---	---
395:						
Rock outcrop	0-60	---	---	---	---	---
Mineral	0-6	7.0-14	5.6-7.3	0	0	0
	6-12	3.0-9.0	5.6-7.3	0	0	0
	12-23	2.0-6.0	6.1-7.3	0	0	0
	23-27	---	---	---	---	---
396:						
Rock outcrop	0-60	---	---	---	---	---
Rufus	0-5	6.0-12	6.6-7.3	0	0	0
	5-15	6.0-10	6.1-7.3	0	0	0
	15-19	---	---	---	---	---
397:						
Rock outcrop	0-60	---	---	---	---	---
Soaplake	0-10	2.0-7.0	6.6-7.8	0	0	0
	10-17	1.0-6.0	6.6-7.8	0	0	0
	17-21	---	---	---	---	---
398:						
Rock outcrop	0-60	---	---	---	---	---
Swakane	0-7	4.0-8.0	6.1-7.3	0	0	0
	7-11	3.0-6.0	6.1-7.3	0	0	0
	11-14	3.0-6.0	6.6-7.8	0	0	0
	14-18	---	---	---	---	---
399:						
Rock outcrop	0-60	---	---	---	---	---
Vanbrunt	0-3	3.0-9.0	5.6-6.5	0	0	0
	3-10	2.0-6.0	5.6-6.5	0	0	0
	10-25	1.0-2.0	5.6-6.5	0	0	0
	25-29	---	---	---	---	---
400:						
Roosevelt	0-14	2.0-7.0	6.6-7.8	0	0	0
	14-28	2.0-7.0	6.6-7.8	0	0	0
	28-32	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
400:						
Soaplake	0-10	2.0-7.0	6.6-7.8	0	0	0
	10-17	1.0-6.0	6.6-7.8	0	0	0
	17-21	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
401:						
Roosevelt	0-14	2.0-7.0	6.6-7.8	0	0	0
	14-28	2.0-7.0	6.6-7.8	0	0	0
	28-32	---	---	---	---	---
Soaplake	0-10	2.0-7.0	6.6-7.8	0	0	0
	10-17	1.0-6.0	6.6-7.8	0	0	0
	17-21	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
402:						
Rubble land	0-60	---	---	---	---	---
403:						
Rubble land	0-60	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
404:						
Rubble land	0-60	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
Haploxerolls	0-16	2.0-9.0	6.6-7.8	0	0	0
	16-60	---	6.6-7.8	0	0	0
405:						
Sacheen	0-8	1.0-3.0	6.1-7.3	0	0	0
	8-25	1.0-2.0	6.1-7.3	0	0	0
	25-60	1.0-2.0	6.1-7.3	0	0	0
406:						
Sacheen	0-8	1.0-3.0	6.1-7.3	0	0	0
	8-25	1.0-2.0	6.1-7.3	0	0	0
	25-60	1.0-2.0	6.1-7.3	0	0	0
407:						
Sacheen	0-4	1.0-3.0	6.1-7.3	0	0	0
	4-20	1.0-2.0	6.1-7.3	0	0	0
	20-60	1.0-2.0	6.1-7.3	0	0	0
408:						
Sanpoil	0-12	7.0-13	6.1-7.3	0	0	0
	12-28	5.0-9.0	6.1-7.3	0	0	0
	28-41	2.0-6.0	6.1-7.3	0	0	0
	41-60	0.0-2.0	6.1-7.3	0	0	0
409:						
Sanpoil	0-20	7.0-13	6.1-7.3	0	0	0
	20-28	5.0-9.0	6.1-7.3	0	0	0
	28-45	2.0-6.0	6.1-7.3	0	0	0
	45-60	0.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
410:						
Scala	0-6	2.0-5.0	6.1-7.3	0	0	0
	6-28	1.0-3.0	6.1-7.3	0	0	0
	28-60	1.0-3.0	6.1-7.3	0	0	0
411:						
Sclome	0-13	12-20	6.1-7.3	0	0	0
	13-18	7.0-12	6.1-7.3	0	0	0
	18-28	10-14	6.1-7.3	0	0	0
	28-50	9.0-17	6.1-7.3	0	0	0
	50-60	7.0-15	6.1-7.3	0	0	0
412:						
Scoap	0-3	8.0-12	6.1-7.3	0	0	0
	3-12	6.0-10	6.1-7.3	0	0	0
	12-60	6.0-10	6.1-7.3	0	0	0
413:						
Scoap	0-14	8.0-12	6.1-7.3	0	0	0
	14-22	6.0-10	6.1-7.3	0	0	0
	22-36	6.0-10	6.1-7.3	0	0	0
	36-60	3.0-6.0	6.1-7.3	0	0	0
414:						
Scoap	0-14	8.0-12	6.1-7.3	0	0	0
	14-22	6.0-10	6.1-7.3	0	0	0
	22-36	6.0-10	6.1-7.3	0	0	0
	36-60	3.0-6.0	6.1-7.3	0	0	0
415:						
Scoap	0-14	8.0-12	6.1-7.3	0	0	0
	14-22	6.0-10	6.1-7.3	0	0	0
	22-36	6.0-10	6.1-7.3	0	0	0
	36-60	3.0-6.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
416:						
Scoap	0-14	8.0-12	6.1-7.3	0	0	0
	14-22	6.0-10	6.1-7.3	0	0	0
	22-36	6.0-10	6.1-7.3	0	0	0
	36-60	3.0-6.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
417:						
Scrabblers	0-3	10-30	6.1-7.3	0	0	0
	3-11	10-30	6.1-7.3	0	0	0
	11-24	5.0-15	6.1-7.3	0	0	0
	24-60	0.0-5.0	6.1-7.3	0	0	0
418:						
Scrabblers	0-3	10-30	6.1-7.3	0	0	0
	3-11	10-30	6.1-7.3	0	0	0
	11-24	5.0-15	6.1-7.3	0	0	0
	24-60	0.0-5.0	6.1-7.3	0	0	0
419:						
Scrabblers	0-5	10-30	6.1-7.3	0	0	0
	5-13	10-30	6.1-7.3	0	0	0
	13-20	5.0-15	6.1-7.3	0	0	0
	20-60	0.0-5.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
420:						
Scrabblers	0-5	10-30	6.1-7.3	0	0	0
	5-13	10-30	6.1-7.3	0	0	0
	13-20	5.0-15	6.1-7.3	0	0	0
	20-60	0.0-5.0	6.1-7.3	0	0	0
421:						
Sitdown	0-13	10-30	6.1-7.3	0	0	0
	13-60	0.0-2.0	6.1-7.3	0	0	0
422:						
Skaha	0-7	2.0-5.0	6.6-7.8	0	0	0
	7-35	1.0-4.0	6.6-7.8	0	0	0
	35-60	1.0-3.0	6.6-7.8	0	0	0
423:						
Skaha	0-8	2.0-5.0	6.6-7.8	0	0	0
	8-18	1.0-4.0	6.6-7.8	0	0	0
	18-60	1.0-3.0	6.6-7.8	0	0	0
424:						
Skaha	0-10	2.0-5.0	6.6-7.8	0	0	0
	10-18	1.0-4.0	6.6-7.8	0	0	0
	18-60	1.0-3.0	6.6-7.8	0	0	0
425:						
Skaha	0-7	2.0-5.0	6.6-7.8	0	0	0
	7-60	1.0-3.0	6.6-7.8	0	0	0
426:						
Skaha	0-7	2.0-5.0	6.6-7.8	0	0	0
	7-60	1.0-3.0	6.6-7.8	0	0	0
427:						
Skaha	0-7	2.0-5.0	6.6-7.8	0	0	0
	7-60	1.0-3.0	6.6-7.8	0	0	0
Rock outcrop	0-60	---	---	---	---	---
428:						
Skanid	0-9	4.0-12	5.6-7.3	0	0	0
	9-14	1.0-3.0	6.1-7.3	0	0	0
	14-24	---	---	---	---	---
429:						
Skanid	0-9	4.0-12	5.6-7.3	0	0	0
	9-14	1.0-3.0	6.1-7.3	0	0	0
	14-24	---	---	---	---	---
430:						
Skanid	0-9	4.0-12	5.6-7.3	0	0	0
	9-14	1.0-3.0	6.1-7.3	0	0	0
	14-24	---	---	---	---	---
431:						
Skanid	0-5	4.0-12	5.6-7.3	0	0	0
	5-11	2.0-5.0	5.6-7.3	0	0	0
	11-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
432:						
Skanid	0-5	4.0-12	5.6-7.3	0	0	0
	5-11	2.0-5.0	5.6-7.3	0	0	0
	11-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	---	---	---	---	---
433:						
Skanid	0-5	4.0-12	5.6-7.3	0	0	0
	5-11	2.0-5.0	5.6-7.3	0	0	0
	11-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	---	---	---	---	---
434:						
Skanid	0-9	4.0-12	5.6-7.3	0	0	0
	9-14	1.0-3.0	6.1-7.3	0	0	0
	14-24	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
435:						
Skanid	0-9	4.0-12	5.6-7.3	0	0	0
	9-14	1.0-3.0	6.1-7.3	0	0	0
	14-24	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
436:						
Skanid	0-5	4.0-12	5.6-7.3	0	0	0
	5-11	2.0-5.0	5.6-7.3	0	0	0
	11-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
437:						
Spens	0-3	1.0-4.0	6.1-7.3	0	0	0
	3-15	2.0-5.0	6.1-7.3	0	0	0
	15-60	0.0-2.0	6.1-7.3	0	0	0
438:						
Spens	0-3	1.0-4.0	6.1-7.3	0	0	0
	3-15	2.0-5.0	6.1-7.3	0	0	0
	15-60	0.0-2.0	6.1-7.3	0	0	0
439:						
Spokane	0-10	6.0-13	6.1-7.3	0	0	0
	10-25	3.0-9.0	6.1-7.3	0	0	0
	25-35	---	---	---	---	---
440:						
Spokane	0-10	6.0-13	6.1-7.3	0	0	0
	10-25	3.0-9.0	6.1-7.3	0	0	0
	25-35	---	---	---	---	---
441:						
Spokane	0-10	6.0-13	6.1-7.3	0	0	0
	10-25	3.0-9.0	6.1-7.3	0	0	0
	25-35	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
442:						
Spokane	0-9	6.0-13	6.1-7.3	0	0	0
	9-22	3.0-9.0	6.1-7.3	0	0	0
	22-33	1.0-4.0	6.1-7.3	0	0	0
	33-43	---	---	---	---	---
443:						
Spokane	0-9	6.0-13	6.1-7.3	0	0	0
	9-22	3.0-9.0	6.1-7.3	0	0	0
	22-33	1.0-4.0	6.1-7.3	0	0	0
	33-43	---	---	---	---	---
444:						
Spokane	0-10	6.0-13	6.1-7.3	0	0	0
	10-25	3.0-9.0	6.1-7.3	0	0	0
	25-35	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
445:						
Spokane	0-10	6.0-13	6.1-7.3	0	0	0
	10-25	3.0-9.0	6.1-7.3	0	0	0
	25-35	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
446:						
Spokane	0-9	6.0-13	6.1-7.3	0	0	0
	9-22	3.0-9.0	6.1-7.3	0	0	0
	22-33	1.0-4.0	6.1-7.3	0	0	0
	33-43	---	---	---	---	---
Skanid	0-5	4.0-12	5.6-7.3	0	0	0
	5-11	2.0-5.0	5.6-7.3	0	0	0
	11-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	---	---	---	---	---
447:						
Spokane	0-9	6.0-13	6.1-7.3	0	0	0
	9-22	3.0-9.0	6.1-7.3	0	0	0
	22-33	1.0-4.0	6.1-7.3	0	0	0
	33-43	---	---	---	---	---
Skanid	0-5	4.0-12	5.6-7.3	0	0	0
	5-11	2.0-5.0	5.6-7.3	0	0	0
	11-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	---	---	---	---	---
448:						
Spokane	0-9	6.0-13	6.1-7.3	0	0	0
	9-22	3.0-9.0	6.1-7.3	0	0	0
	22-33	1.0-4.0	6.1-7.3	0	0	0
	33-43	---	---	---	---	---
Skanid	0-5	4.0-12	5.6-7.3	0	0	0
	5-11	2.0-5.0	5.6-7.3	0	0	0
	11-18	1.0-3.0	6.1-7.3	0	0	0
	18-28	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
449:						
Springdale	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	3.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-5.0	6.1-7.3	0	0	0
	17-60	1.0-5.0	6.1-7.3	0	0	0
450:						
Springdale	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	3.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-5.0	6.1-7.3	0	0	0
	17-60	1.0-5.0	6.1-7.3	0	0	0
451:						
Springdale	0-4	3.0-8.0	6.1-7.3	0	0	0
	4-11	3.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-5.0	6.1-7.3	0	0	0
	17-60	1.0-5.0	6.1-7.3	0	0	0
452:						
Stapaloop	0-7	1.0-4.0	6.1-7.3	0	0	0
	7-22	1.0-4.0	6.1-7.3	0	0	0
	22-31	1.0-2.0	6.1-7.3	0	0	0
	31-60	1.0-2.0	6.1-7.3	0	0	0
453:						
Stapaloop	0-7	1.0-4.0	6.1-7.3	0	0	0
	7-22	1.0-4.0	6.1-7.3	0	0	0
	22-31	1.0-2.0	6.1-7.3	0	0	0
	31-60	1.0-2.0	6.1-7.3	0	0	0
454:						
Stapaloop	0-2	1.0-4.0	6.1-7.3	0	0	0
	2-17	1.0-4.0	6.1-7.3	0	0	0
	17-38	1.0-2.0	6.1-7.3	0	0	0
	38-60	1.0-2.0	6.1-7.3	0	0	0
455:						
Stepstone	0-6	10-30	6.1-7.3	0	0	0
	6-18	10-30	6.1-7.3	0	0	0
	18-22	10-30	6.1-7.3	0	0	0
	22-60	1.0-3.0	6.1-7.3	0	0	0
456:						
Stepstone	0-6	10-30	6.1-7.3	0	0	0
	6-18	10-30	6.1-7.3	0	0	0
	18-22	10-30	6.1-7.3	0	0	0
	22-60	1.0-3.0	6.1-7.3	0	0	0
457:						
Stepstone	0-6	10-30	6.1-7.3	0	0	0
	6-18	10-30	6.1-7.3	0	0	0
	18-22	10-30	6.1-7.3	0	0	0
	22-60	1.0-3.0	6.1-7.3	0	0	0
458:						
Stepstone	0-9	10-30	6.1-7.3	0	0	0
	9-29	10-30	6.1-7.3	0	0	0
	29-60	1.0-3.0	6.1-7.3	0	0	0
459:						
Stevens	0-22	9.0-15	6.6-7.3	0	0	0
	22-38	5.0-9.0	6.6-7.3	0	0	0
	38-60	5.0-9.0	6.6-7.8	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
460:						
Stevens	0-22	9.0-15	6.6-7.3	0	0	0
	22-38	5.0-9.0	6.6-7.3	0	0	0
	38-60	5.0-9.0	6.6-7.8	0	0	0
461:						
Stevens	0-22	9.0-15	6.6-7.3	0	0	0
	22-38	5.0-9.0	6.6-7.3	0	0	0
	38-60	5.0-9.0	6.6-7.8	0	0	0
462:						
Stevens	0-15	9.0-15	6.6-7.3	0	0	0
	15-31	5.0-9.0	6.6-7.3	0	0	0
	31-60	5.0-9.0	6.6-7.8	0	0	0
463:						
Strat	0-11	2.0-7.0	6.6-7.8	0	0	0
	11-24	2.0-5.0	6.6-7.8	0	0	0
	24-60	1.0-2.0	7.4-8.4	0-2	0	0
464:						
Stubblefield	0-9	2.0-6.0	6.6-7.8	0	0	0
	9-24	0.0-2.0	6.6-7.8	0	0	0
	24-28	---	---	---	---	---
	28-60	6.0-16	7.4-9.0	1-10	0.0-2.0	0
465:						
Swakane	0-6	4.0-8.0	6.1-7.3	0	0	0
	6-11	3.0-6.0	6.1-7.3	0	0	0
	11-14	3.0-6.0	6.6-7.8	0	0	0
	14-18	---	---	---	---	---
466:						
Swakane	0-7	4.0-8.0	6.1-7.3	0	0	0
	7-11	3.0-6.0	6.1-7.3	0	0	0
	11-14	3.0-6.0	6.6-7.8	0	0	0
	14-18	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
467:						
Swakane	0-7	4.0-8.0	6.1-7.3	0	0	0
	7-11	3.0-6.0	6.1-7.3	0	0	0
	11-14	3.0-6.0	6.6-7.8	0	0	0
	14-18	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
468:						
Swipkin	0-16	5.0-9.0	6.1-7.3	0	0	0
	16-21	3.0-7.0	6.6-7.3	0	0	0
	21-44	3.0-5.0	6.6-8.4	0	0	0
	44-60	3.0-8.0	6.6-8.4	0-5	0.0-2.0	0
469:						
Swipkin	0-16	5.0-9.0	6.1-7.3	0	0	0
	16-21	3.0-7.0	6.6-7.3	0	0	0
	21-44	3.0-5.0	6.6-8.4	0	0	0
	44-60	3.0-8.0	6.6-8.4	0-5	0.0-2.0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
470:						
Thout	0-4	4.0-9.0	6.6-7.3	0	0	0
	4-18	4.0-9.0	6.6-7.3	0	0	0
	18-26	3.0-7.0	6.6-7.3	0	0	0
	26-30	---	---	---	---	---
471:						
Thout	0-4	4.0-9.0	6.6-7.3	0	0	0
	4-18	4.0-9.0	6.6-7.3	0	0	0
	18-26	3.0-7.0	6.6-7.3	0	0	0
	26-30	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
472:						
Thout	0-4	4.0-9.0	6.6-7.3	0	0	0
	4-18	4.0-9.0	6.6-7.3	0	0	0
	18-26	3.0-7.0	6.6-7.3	0	0	0
	26-30	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
473:						
Thout	0-4	4.0-9.0	6.6-7.3	0	0	0
	4-18	4.0-9.0	6.6-7.3	0	0	0
	18-26	3.0-7.0	6.6-7.3	0	0	0
	26-30	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
474:						
Timentwa	0-18	5.0-20	6.1-7.8	0	0	0
	18-41	5.0-15	6.6-8.4	0-5	0	0
	41-56	2.0-9.0	7.4-9.0	15-20	0.0-4.0	0-2
	56-60	---	---	---	---	---
475:						
Timentwa	0-18	5.0-20	6.1-7.8	0	0	0
	18-41	5.0-15	6.6-8.4	0-5	0	0
	41-56	2.0-9.0	7.4-9.0	15-20	0.0-4.0	0-2
	56-60	---	---	---	---	---
476:						
Timentwa	0-12	5.0-20	6.6-7.8	0	0	0
	12-20	5.0-15	6.6-7.8	0	0	0
	20-37	2.0-9.0	6.6-7.8	0-5	0	0
	37-52	2.0-9.0	7.4-9.0	15-30	0.0-4.0	0-2
	52-60	---	---	---	---	---
477:						
Timentwa	0-18	5.0-20	6.1-7.8	0	0	0
	18-41	5.0-15	6.6-8.4	0-5	0	0
	41-56	2.0-9.0	7.4-9.0	15-20	0.0-4.0	0-2
	56-60	---	---	---	---	---
Timentwa	0-20	5.0-20	6.1-7.8	0	0	0
	20-37	5.0-15	6.6-8.4	0-5	0	0
	37-42	2.0-9.0	7.4-9.0	15-20	0.0-4.0	0-2
	42-60	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
478:						
Timentwa	0-8	5.0-20	6.6-7.8	0	0	0
	8-20	5.0-15	6.6-7.8	0	0	0
	20-37	2.0-9.0	6.6-7.8	0-5	0	0
	37-52	2.0-9.0	7.4-9.0	15-30	0.0-4.0	0-2
	52-60	---	---	---	---	---
Timentwa	0-4	5.0-20	6.6-7.8	0	0	0
	4-36	5.0-15	6.6-7.8	0	0	0
	36-42	2.0-9.0	6.6-7.8	0-5	0	0
	42-56	2.0-9.0	7.4-9.0	15-30	0.0-4.0	0-2
	56-60	---	---	---	---	---
479:						
Timentwa	0-18	5.0-20	6.1-7.8	0	0	0
	18-41	5.0-15	6.6-8.4	0-5	0	0
	41-56	2.0-9.0	7.4-9.0	15-20	0.0-4.0	0-2
	56-60	---	---	---	---	---
Bakeoven	0-3	10-20	6.1-7.3	0	0	0
	3-7	10-20	6.1-7.3	0	0	0
	7-11	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
480:						
Togo	0-4	10-30	6.1-7.3	0	0	0
	4-15	10-30	6.1-7.3	0	0	0
	15-28	4.0-10	5.6-6.5	0	0	0
	28-60	4.0-10	5.6-6.5	0	0	0
481:						
Togo	0-4	10-30	6.1-7.3	0	0	0
	4-15	10-30	6.1-7.3	0	0	0
	15-28	4.0-10	5.6-6.5	0	0	0
	28-60	4.0-10	5.6-6.5	0	0	0
482:						
Togo	0-4	10-30	6.1-7.3	0	0	0
	4-15	10-30	6.1-7.3	0	0	0
	15-28	4.0-10	5.6-6.5	0	0	0
	28-60	4.0-10	5.6-6.5	0	0	0
483:						
Togo	0-5	10-30	6.1-7.3	0	0	0
	5-16	10-30	6.1-7.3	0	0	0
	16-29	4.0-10	5.6-6.5	0	0	0
	29-60	4.0-10	5.6-6.5	0	0	0
484:						
Togo	0-6	10-30	6.1-7.3	0	0	0
	6-16	10-30	6.1-7.3	0	0	0
	16-30	4.0-10	5.6-6.5	0	0	0
	30-60	4.0-10	5.6-6.5	0	0	0
Rock outcrop	0-60	---	---	---	---	---
485:						
Torboy	0-4	2.0-5.0	6.1-7.3	0	0	0
	4-16	2.0-5.0	6.1-7.3	0	0	0
	16-33	1.0-5.0	6.1-7.3	0	0	0
	33-60	1.0-5.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
486:						
Torboy	0-4	2.0-5.0	6.1-7.3	0	0	0
	4-16	2.0-5.0	6.1-7.3	0	0	0
	16-33	1.0-5.0	6.1-7.3	0	0	0
	33-60	1.0-5.0	6.1-7.3	0	0	0
487:						
Torrifluventic Haploxerolls	0-11	1.0-4.0	6.6-8.4	0-5	0.0-4.0	0
	11-60	1.0-3.0	6.6-8.4	0-5	0.0-4.0	0
488:						
Tunkcreek	0-7	10-30	5.6-6.5	0	0	0
	7-16	10-30	5.6-6.5	0	0	0
	16-31	0.0-2.0	6.1-7.3	0	0	0
	31-60	0.0-2.0	6.1-7.3	0	0	0
489:						
Tunkcreek	0-7	10-30	5.6-6.5	0	0	0
	7-16	10-30	5.6-6.5	0	0	0
	16-31	0.0-2.0	6.1-7.3	0	0	0
	31-60	0.0-2.0	6.1-7.3	0	0	0
490:						
Tyee	0-11	2.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-2.0	6.1-7.3	0	0	0
	17-27	---	---	---	---	---
491:						
Tyee	0-13	2.0-8.0	6.1-7.3	0	0	0
	13-16	1.0-2.0	6.1-7.3	0	0	0
	16-26	---	---	---	---	---
492:						
Tyee	0-11	2.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-2.0	6.1-7.3	0	0	0
	17-27	---	---	---	---	---
493:						
Tyee	0-11	2.0-8.0	6.1-7.3	0	0	0
	11-17	1.0-2.0	6.1-7.3	0	0	0
	17-27	---	---	---	---	---
Morical	0-17	5.0-13	6.6-7.3	0	0	0
	17-33	9.0-13	6.6-7.8	0	0	0
	33-43	---	---	---	---	---
Tyee	0-13	2.0-8.0	6.1-7.3	0	0	0
	13-16	1.0-2.0	6.1-7.3	0	0	0
	16-26	---	---	---	---	---
494:						
Tyee	0-13	2.0-8.0	6.1-7.3	0	0	0
	13-16	1.0-2.0	6.1-7.3	0	0	0
	16-26	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
495:						
Tyee	0-13	2.0-8.0	6.1-7.3	0	0	0
	13-16	1.0-2.0	6.1-7.3	0	0	0
	16-26	---	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
495:						
Rock outcrop	0-60	---	---	---	---	---
496:						
Typic Haplaquolls	0-8	2.0-8.0	6.6-7.8	0	0	0
	8-24	1.0-5.0	7.4-8.4	0-5	0.0-2.0	0
	24-60	1.0-4.0	7.4-8.4	0-5	0.0-2.0	0
497:						
Typic Xerorthents	0-5	5.0-11	6.6-7.8	0	0	0
	5-9	3.0-5.0	6.6-7.8	0	0	0
	9-60	1.0-7.0	7.4-8.4	1-5	0.0-2.0	0
Typic Xerochrepts	0-7	5.0-11	6.6-7.3	0	0	0
	7-22	4.0-9.0	6.6-7.3	0	0	0
	22-31	4.0-9.0	7.4-7.8	0-5	0	0
	31-60	4.0-9.0	7.4-7.8	1-5	0	0-2
498:						
Ultic Haploxerolls	0-13	2.0-9.0	6.1-7.3	0	0	0
	13-28	1.0-9.0	6.6-7.8	0	0	0
	28-60	1.0-11	6.6-8.4	0	0	0
499:						
Uncas	0-7	40-80	6.6-7.3	0	0	0
	7-11	10-30	6.6-7.3	0	0	0
	11-52	10-30	6.6-7.3	0	0	0
	52-60	15-35	6.6-7.3	0	0	0
500:						
Vanbrunt	0-3	3.0-9.0	5.6-6.5	0	0	0
	3-10	2.0-6.0	5.6-6.5	0	0	0
	10-25	1.0-2.0	5.6-6.5	0	0	0
	25-29	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
501:						
Vanbrunt	0-3	3.0-9.0	5.6-6.5	0	0	0
	3-10	2.0-6.0	5.6-6.5	0	0	0
	10-25	1.0-2.0	5.6-6.5	0	0	0
	25-29	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
502:						
Vanbrunt	0-3	3.0-9.0	5.6-6.5	0	0	0
	3-10	2.0-6.0	5.6-6.5	0	0	0
	10-25	1.0-2.0	5.6-6.5	0	0	0
	25-29	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
503:						
Wannacott	0-10	4.0-7.0	6.6-7.8	0	0	0
	10-15	4.0-7.0	6.6-7.8	0	0	0
	15-29	5.0-10	7.4-9.0	0-15	0.0-2.0	0-2
	29-35	2.0-5.0	7.4-9.0	15-25	0.0-4.0	0-2
	35-60	2.0-5.0	7.4-9.0	15-25	0.0-4.0	0-2

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
504:						
Wannacott	0-10	4.0-7.0	6.6-7.8	0	0	0
	10-15	4.0-7.0	6.6-7.8	0	0	0
	15-29	5.0-10	7.4-9.0	0-15	0.0-2.0	0-2
	29-35	2.0-5.0	7.4-9.0	15-25	0.0-4.0	0-2
	35-60	2.0-5.0	7.4-9.0	15-25	0.0-4.0	0-2
505:						
Wapal	0-5	2.0-8.0	5.6-7.3	0	0	0
	5-11	2.0-4.0	5.6-7.3	0	0	0
	11-60	1.0-2.0	6.1-7.3	0	0	0
506:						
Wapal	0-7	1.0-7.0	6.1-7.3	0	0	0
	7-15	1.0-3.0	6.1-7.3	0	0	0
	15-60	0.0-2.0	6.1-7.3	0	0	0
507:						
Wapal	0-5	2.0-8.0	5.6-7.3	0	0	0
	5-11	2.0-4.0	5.6-7.3	0	0	0
	11-60	1.0-2.0	6.1-7.3	0	0	0
508:						
Wapal	0-5	2.0-8.0	5.6-7.3	0	0	0
	5-11	2.0-4.0	5.6-7.3	0	0	0
	11-60	1.0-2.0	6.1-7.3	0	0	0
509:						
Wellscreek	0-10	8.0-15	6.1-7.3	0	0	0
	10-24	7.0-12	6.1-7.3	0	0	0
	24-60	4.0-7.0	6.1-7.3	0	0	0
510:						
Wellscreek	0-10	8.0-15	6.1-7.3	0	0	0
	10-24	7.0-12	6.1-7.3	0	0	0
	24-60	4.0-7.0	6.1-7.3	0	0	0
511:						
Wellscreek	0-6	8.0-15	6.1-7.3	0	0	0
	6-14	7.0-12	6.1-7.3	0	0	0
	14-26	5.0-11	6.1-7.3	0	0	0
	26-42	5.0-9.0	6.1-7.3	0	0	0
	42-60	4.0-7.0	6.1-7.3	0	0	0
512:						
Whitestone	0-6	4.0-10	6.1-7.3	0	0	0
	6-29	1.0-4.0	6.1-7.3	0	0	0
	29-60	0.0-2.0	6.1-7.3	0	0	0
513:						
Whitestone	0-16	4.0-7.0	6.1-7.3	0	0	0
	16-32	1.0-4.0	6.1-7.3	0	0	0
	32-60	0.0-2.0	6.1-7.3	0	0	0
514:						
Whitestone	0-16	4.0-7.0	6.1-7.3	0	0	0
	16-32	1.0-4.0	6.1-7.3	0	0	0
	32-60	0.0-2.0	6.1-7.3	0	0	0
515:						
Whitestone	0-10	4.0-7.0	6.1-7.3	0	0	0
	10-27	1.0-5.0	6.1-7.3	0	0	0
	27-60	0.0-2.0	6.1-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
516:						
Whitestone	0-16	4.0-7.0	6.1-7.3	0	0	0
	16-32	1.0-4.0	6.1-7.3	0	0	0
	32-60	0.0-2.0	6.1-7.3	0	0	0
Rock outcrop	0-60	---	---	---	---	---
517:						
Wilmont	0-5	10-30	6.6-7.3	0	0	0
	5-12	10-30	6.6-7.3	0	0	0
	12-27	2.0-5.0	6.6-7.3	0	0	0
	27-47	1.0-4.0	6.6-7.3	0	0	0
	47-60	0.0-2.0	6.6-7.3	0	0	0
518:						
Wilmont	0-5	10-30	6.6-7.3	0	0	0
	5-12	10-30	6.6-7.3	0	0	0
	12-27	2.0-5.0	6.6-7.3	0	0	0
	27-47	1.0-4.0	6.6-7.3	0	0	0
	47-60	0.0-2.0	6.6-7.3	0	0	0
519:						
Wilmont	0-4	10-30	6.6-7.3	0	0	0
	4-11	10-30	6.6-7.3	0	0	0
	11-21	2.0-5.0	6.6-7.3	0	0	0
	21-36	1.0-4.0	6.6-7.3	0	0	0
	36-60	0.0-2.0	6.6-7.3	0	0	0
520:						
Wilmont	0-4	10-30	6.6-7.3	0	0	0
	4-11	10-30	6.6-7.3	0	0	0
	11-21	2.0-5.0	6.6-7.3	0	0	0
	21-36	1.0-4.0	6.6-7.3	0	0	0
	36-60	0.0-2.0	6.6-7.3	0	0	0
521:						
Winchester	0-9	1.0-2.0	6.1-7.3	0	0	0
	9-60	1.0-2.0	6.6-7.8	0-5	0.0-2.0	0
522:						
Winchester	0-9	1.0-2.0	6.1-7.3	0	0	0
	9-60	1.0-2.0	6.6-7.8	0-5	0.0-2.0	0
523:						
Winchester	0-9	1.0-2.0	6.1-7.3	0	0	0
	9-60	1.0-2.0	6.6-7.8	0-5	0.0-2.0	0
524:						
Winchester	0-9	1.0-2.0	6.1-7.3	0	0	0
	9-60	1.0-2.0	6.6-7.8	0-5	0.0-2.0	0
Rock outcrop	0-60	---	---	---	---	---
525:						
Winthrop	0-10	1.0-4.0	6.1-7.3	0	0	0
	10-60	0.0-1.0	6.6-7.3	0	0	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	*meq/100 g*	*pH*	*Pct*	*mmhos/cm*	
526:						
Wynhoff	0-7	3.0-6.0	6.6-7.8	0	0	0
	7-12	2.0-6.0	6.6-7.8	0	0	0
	12-28	2.0-6.0	6.6-7.8	0	0	0
	28-34	2.0-4.0	6.6-7.8	0	0	0
	34-38	---	---	---	---	---
527:						
Wynhoff	0-7	3.0-6.0	6.6-7.8	0	0	0
	7-12	2.0-6.0	6.6-7.8	0	0	0
	12-28	2.0-6.0	6.6-7.8	0	0	0
	28-34	2.0-4.0	6.6-7.8	0	0	0
	34-38	---	---	---	---	---
528:						
Xeric Torriorthents	0-19	2.0-4.0	6.6-7.8	0	0	0
	19-60	1.0-9.0	6.6-7.8	0-5	0.0-2.0	0
529:						
Xeric Torriorthents	0-8	1.0-3.0	6.6-7.8	0	0	0
	8-60	1.0-9.0	6.6-7.8	0-5	0.0-2.0	0
530:						
Xerochrepts	0-3	3.0-10	5.6-7.3	0	0	0
	3-24	1.0-5.0	5.6-7.3	0	0	0
	24-60	1.0-3.0	5.6-7.3	0	0	0
Rubble land	0-60	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---
531:						
Water	---	---	---	---	---	---
532:						
Dam	---	---	---	---	---	---

Table 20.--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	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
1:									
Achimin	---	---	---	---	0	---	Moderate	High	Low
2:									
Achimin	---	---	---	---	0	---	Moderate	High	Low
Calcic Pachic Haploxerolls	---	---	---	---	0	---	High	High	Low
3:									
Aeneas	---	---	---	---	0	---	Moderate	Moderate	Low
4:									
Aeneas	---	---	---	---	0	---	Moderate	Moderate	Low
5:									
Ahtanum	Duripan	20-40	1-8	Strongly cemented	0	---	High	High	Moderate
6:									
Aits	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
7:									
Aits	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
8:									
Aits	---	---	---	---	0	---	Moderate	Moderate	Low
9:									
Anders	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	High	Low
10:									
Andic Cryaquepts	---	---	---	---	0	---	High	High	Moderate
11:									
Annum	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	High	Low
12:									
Annum	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
13:									
Annum	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	High	Low
Annum	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	High	Low
14:									
Apex	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
15:									
Apex	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
16:									
Apex	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
17:									
Apex	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
18:									
Apex	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
19:									
Apex	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
20:									
Aquic Xerofluvents	---	---	---	---	0	---	High	Moderate	Low
21:									
Aquic Xerofluvents	---	---	---	---	0	---	High	Moderate	Low
22:									
Aquic Xerofluvents	---	---	---	---	0	---	High	Moderate	Low
23:									
Badge	---	---	---	---	0	---	Moderate	High	Low
24:									
Badge	---	---	---	---	0	---	Moderate	High	Low
Rubble land	---	---	---	---	0	---	None	---	---
25:									
Badland	---	---	---	---	0	---	Low	High	Low
26:									
Bakeoven	Bedrock (lithic)	4-10	---	Indurated	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
27:									
Bakeoven	Bedrock (lithic)	4-10	---	Indurated	0	---	Moderate	Moderate	Low
Olical	Bedrock (lithic)	40-60	---	Indurated	0	---	Moderate	High	Low
28:									
Bakeoven	Bedrock (lithic)	4-10	---	Indurated	0	---	Moderate	Moderate	Low
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
29:									
Baldknob	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Thout	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
30:									
Baldknob	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Thout	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
31:									
Barnellcreek	Dense material	40-60	---	Noncemented	0	---	High	Moderate	Low
32:									
Bearspring	---	---	---	---	0	---	Moderate	Moderate	Low
33:									
Bearspring	---	---	---	---	0	---	Moderate	Moderate	Low
34:									
Bernhill	---	---	---	---	0	---	Moderate	Moderate	Low
35:									
Bernhill	---	---	---	---	0	---	Moderate	Moderate	Low
36:									
Beverly	---	---	---	---	0	---	Low	Moderate	Low
37:									
Bisbee	---	---	---	---	0	---	Low	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
38:									
Bisbee	---	---	---	---	0	---	Low	Moderate	Low
39:									
Boesel	---	---	---	---	0	---	High	Moderate	Low
40:									
Bong	---	---	---	---	0	---	Low	Moderate	Low
41:									
Bong	---	---	---	---	0	---	Low	Moderate	Low
42:									
Bong	---	---	---	---	0	---	Low	Moderate	Low
43:									
Borgeau	---	---	---	---	0	---	Moderate	Moderate	Moderate
44:									
Borgeau	---	---	---	---	0	---	Moderate	Moderate	Moderate
45:									
Borgeau	---	---	---	---	0	---	Moderate	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
46:									
Borosaprists	---	---	---	---	4-10	16-51	High	High	High
47:									
Bossburg	---	---	---	---	3-5	6-10	High	High	Low
48:									
Broadax	---	---	---	---	0	---	Moderate	High	Low
49:									
Broadax	---	---	---	---	0	---	Moderate	High	Low
50:									
Brusher	---	---	---	---	0	---	Moderate	Moderate	Low
51:									
Brusher	---	---	---	---	0	---	Moderate	Moderate	Low
52:									
Brusher	---	---	---	---	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
53:									
Brusher	---	---	---	---	0	---	Moderate	Moderate	Low
54:									
Buhrig	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
55:									
Buhrig	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
56:									
Buhrig	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
57:									
Buhrig	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
58:									
Buhrig	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
59:									
Canteen	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Moderate
60:									
Canteen	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Moderate
61:									
Canteen	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Moderate
62:									
Canteen	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Moderate
63:									
Capoose	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
64:									
Capoose	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
65:									
Capoose	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
66:									
Capoose	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
67:									
Cashmere	---	---	---	---	0	---	Moderate	High	Low
68:									
Cashmere	---	---	---	---	0	---	Moderate	High	Low
69:									
Cashmere	---	---	---	---	0	---	Moderate	High	Low
70:									
Cashmere	---	---	---	---	0	---	Moderate	High	Low
71:									
Cashmont	---	---	---	---	0	---	Moderate	Moderate	Low
72:									
Cashmont	---	---	---	---	0	---	Moderate	Moderate	Low
73:									
Cedonia	---	---	---	---	0	---	Moderate	High	Low
74:									
Cedonia	---	---	---	---	0	---	Moderate	High	Low
75:									
Cedonia	---	---	---	---	0	---	Moderate	High	Low
76:									
Cedonia	---	---	---	---	0	---	Moderate	High	Low
77:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
78:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
79:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
80:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
81:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
82:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
83:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Brusher	---	---	---	---	0	---	Moderate	Moderate	Low
84:									
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Centralpeak	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
85:									
Chumstick	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
86:									
Chumstick	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
87:									
Codylake	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	High	Moderate	Moderate
88:									
Codylake	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	High	Moderate	Moderate
89:									
Codylake	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	High	Moderate	Moderate
90:									
Colockum	---	---	---	---	0	---	Moderate	High	Low
91:									
Colockum	---	---	---	---	0	---	Moderate	High	Low
92:									
Colockum	---	---	---	---	0	---	Moderate	High	Low
93:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
94:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
95:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
96:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
97:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
98:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
99:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Bakeoven	Bedrock (lithic)	4-10	---	Indurated	0	---	Moderate	Moderate	Low
100:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
101:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
102:									
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Swakane	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
103:									
Couleedam	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
104:									
Coxlake	---	---	---	---	0	---	High	High	Low
105:									
Cryofluvents	---	---	---	---	0	---	High	High	Low
106:									
Cubcreek	---	---	---	---	0	---	High	High	Low
107:									
Cumulic Haploxerolls	---	---	---	---	0	---	High	Moderate	Low
108:									
Dart	---	---	---	---	0	---	Low	Moderate	Low
109:									
Dart	---	---	---	---	0	---	Low	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
110:									
Dart	---	---	---	---	0	---	Low	Moderate	Low
Springdale	---	---	---	---	0	---	Low	Moderate	Moderate
111:									
Dart	---	---	---	---	0	---	Low	Moderate	Low
Springdale	---	---	---	---	0	---	Low	Moderate	Moderate
112:									
Dehart	---	---	---	---	0	---	Moderate	Moderate	Low
113:									
Dehart	---	---	---	---	0	---	Moderate	Moderate	Low
114:									
Dehart	---	---	---	---	0	---	Moderate	Moderate	Low
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
115:									
Dehart	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
116:									
Dehart	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
117:									
Dinkelman	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Low
118:									
Dinkelman	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Low
119:									
Dinkelman	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Low
120:									
Disautel	Dense material	20-40	---	Noncemented	0	---	Moderate	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
121:									
Disautel	Dense material	20-40	---	Noncemented	0	---	Moderate	High	Low
122:									
Disautel	Dense material	20-40	---	Noncemented	0	---	Moderate	High	Low
Nespelem	Duripan	20-40	1-3	Weakly cemented	0	---	Moderate	High	Low
123:									
Disautel	Dense material	20-40	---	Noncemented	0	---	Moderate	High	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
124:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
125:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
126:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
127:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
128:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
129:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
130:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
131:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
132:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
133:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Goldlake	Dense material	40-60	---	Noncemented	0	---	High	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
134:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
135:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
136:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
137:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
138:									
Donavan	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
139:									
Duleylake	---	---	---	---	0	---	High	High	Moderate
140:									
Elbowlake	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
141:									
Elbowlake	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
142:									
Elbowlake	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
143:									
Elbowlake	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
144:									
Elbowlake	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
145:									
Elbowlake	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
146:									
Ellisforde	---	---	---	---	0	---	Moderate	High	Low
147:									
Ellisforde	---	---	---	---	0	---	Moderate	High	Low
148:									
Ellisforde	---	---	---	---	0	---	Moderate	High	Low
149:									
Elvedere	---	---	---	---	0	---	Moderate	High	Moderate
150:									
Elvedere	---	---	---	---	0	---	Moderate	High	Moderate
151:									
Elvedere	---	---	---	---	0	---	Moderate	High	Moderate
152:									
Elvedere	---	---	---	---	0	---	Moderate	High	Moderate
Leahy	---	---	---	---	0	---	High	High	High
153:									
Emdent	---	---	---	---	0	---	High	High	Moderate
154:									
Emdent	---	---	---	---	0	---	High	High	Moderate
155:									
Ewall	---	---	---	---	0	---	Low	Low	Low
156:									
Ewall	---	---	---	---	0	---	Low	Low	Low
157:									
Ewall	---	---	---	---	0	---	Low	Moderate	Low
158:									
Ewall	---	---	---	---	0	---	Low	Moderate	Low
159:									
Ewall	---	---	---	---	0	---	Low	Moderate	Low
160:									
Farrell	---	---	---	---	0	---	Moderate	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
161:									
Farrell	---	---	---	---	0	---	Moderate	High	Low
162:									
Farrell	---	---	---	---	0	---	Moderate	High	Low
163:									
Farrell	---	---	---	---	0	---	Moderate	High	Low
164:									
Fivelakes	---	---	---	---	0	---	Moderate	Moderate	Low
165:									
Fivelakes	---	---	---	---	0	---	High	Moderate	Low
166:									
Fivelakes	---	---	---	---	0	---	Moderate	Moderate	Low
167:									
Fivelakes	---	---	---	---	0	---	Moderate	Moderate	Low
168:									
Fivelakes	---	---	---	---	0	---	Moderate	Moderate	Low
169:									
Friedlander	---	---	---	---	0	---	Moderate	High	Low
170:									
Friedlander	---	---	---	---	0	---	Moderate	High	Low
171:									
Friedlander	---	---	---	---	0	---	Moderate	High	Low
172:									
Garrison	---	---	---	---	0	---	Moderate	Moderate	Low
173:									
Garrison	---	---	---	---	0	---	Moderate	Moderate	Low
174:									
Garrison	---	---	---	---	0	---	Moderate	Moderate	Low
175:									
Georgecreek	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
176:									
Georgecreek	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Low
177:									
Georgecreek	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Low
178:									
Georgecreek	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	Moderate	Moderate	Low
179:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
180:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
181:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
182:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
183:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
184:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
185:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Conconully	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
186:									
Ginnis	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
187:									
Glenrose	---	---	---	---	0	---	Moderate	Moderate	Low
188:									
Glenrose	---	---	---	---	0	---	Moderate	Moderate	Low
189:									
Goddard	---	---	---	---	0	---	Moderate	Moderate	Low
190:									
Goddard	---	---	---	---	0	---	Moderate	Moderate	Low
191:									
Goddard	---	---	---	---	0	---	Moderate	Moderate	Low
192:									
Goldlake	Dense material	40-60	---	Noncemented	0	---	High	Moderate	Low
193:									
Gooseflats	Duripan	40-60	1-7	Weakly cemented	0	---	High	High	High
Gooseflats	---	---	---	---	0	---	High	High	High
194:									
Growden	---	---	---	---	0	---	High	Moderate	Moderate
195:									
Hadencreek	---	---	---	---	0	---	High	High	Low
196:									
Haley	---	---	---	---	0	---	Moderate	Moderate	Low
197:									
Haley	---	---	---	---	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
198:									
Haley	---	---	---	---	0	---	Moderate	Moderate	Low
199:									
Hallcreek	---	---	---	---	0	---	Low	Moderate	Low
200:									
Haploxerolls	---	---	---	---	0	---	Moderate	Moderate	Low
201:									
Hartill	Bedrock (lithic)	20-40	---	Very strongly cemented	0	---	Moderate	Moderate	Low
202:									
Hartill	Bedrock (lithic)	20-40	---	Very strongly cemented	0	---	Moderate	Moderate	Low
203:									
Hellgate	---	---	---	---	0	---	Moderate	Moderate	Low
204:									
Hellgate	---	---	---	---	0	---	Moderate	Moderate	Low
205:									
Henneway	Bedrock (lithic)	40-60	---	Indurated	0	---	Moderate	Moderate	Low
206:									
Henneway	Bedrock (lithic)	40-60	---	Indurated	0	---	Moderate	Moderate	Low
207:									
Henneway	Bedrock (lithic)	40-60	---	Indurated	0	---	Moderate	Moderate	Low
208:									
Heytou	Dense material	20-40	---	Noncemented	0	---	Moderate	High	Low
Stubblefield	Duripan	20-40	1-10	Strongly cemented	0	---	Moderate	High	Low
	Dense material	21-41	---	Noncemented					
209:									
Histosols	---	---	---	---	5-10	16-51	High	Moderate	High
210:									
Hobohill	---	---	---	---	0	---	Low	Low	Low
211:									
Hobohill	---	---	---	---	0	---	Low	Low	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
212:									
Hodgson	---	---	---	---	0	---	High	High	Low
213:									
Hodgson	---	---	---	---	0	---	High	High	Low
214:									
Hodgson	---	---	---	---	0	---	High	High	Low
215:									
Hodgson	---	---	---	---	0	---	High	High	Low
216:									
Hudnut	---	---	---	---	0	---	Moderate	Moderate	Low
217:									
Hudnut	---	---	---	---	0	---	Moderate	Moderate	Low
218:									
Hunters	---	---	---	---	0	---	Moderate	High	Low
219:									
Hunters	---	---	---	---	0	---	Moderate	High	Low
220:									
Inchelium	---	---	---	---	0	---	Moderate	Moderate	Low
221:									
Inchelium	---	---	---	---	0	---	Moderate	Moderate	Low
222:									
Inkler	---	---	---	---	0	---	Moderate	Moderate	Low
223:									
Inkler	---	---	---	---	0	---	Moderate	Moderate	Low
224:									
Inkler	---	---	---	---	0	---	Moderate	Moderate	Low
225:									
Inkler	---	---	---	---	0	---	Moderate	Moderate	Low
Baldknob	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
226:									
Inkler	---	---	---	---	0	---	Moderate	Moderate	Low
Baldknob	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
227:									
Inkler	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
228:									
Inkler	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
229:									
Jimcreek	---	---	---	---	0	---	High	High	Low
230:									
Johntom	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Rubble land	Bedrock (lithic)	40-40	---	Indurated	0	---	None	---	---
231:									
Karamin	---	---	---	---	0	---	Moderate	Moderate	Moderate
232:									
Karamin	---	---	---	---	0	---	Moderate	Moderate	Moderate
233:									
Karamin	---	---	---	---	0	---	Moderate	Moderate	Moderate
234:									
Kartar	---	---	---	---	0	---	Moderate	Moderate	Low
235:									
Kellerbutte	---	---	---	---	0	---	Moderate	Moderate	Low
236:									
Kellerbutte	---	---	---	---	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
237:									
Kenotrail	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
238:									
Kewach	---	---	---	---	0	---	Moderate	High	Low
239:									
Kewach	---	---	---	---	0	---	Moderate	High	Low
240:									
Kewach	---	---	---	---	0	---	Moderate	High	Low
241:									
Kewach	---	---	---	---	0	---	Moderate	High	Low
242:									
Kiehl	---	---	---	---	0	---	Low	Moderate	Low
243:									
Kiehl	---	---	---	---	0	---	Low	Moderate	Low
244:									
Kiehl	---	---	---	---	0	---	Low	Moderate	Low
245:									
Kiehl	---	---	---	---	0	---	Low	Moderate	Low
246:									
Kiehl	---	---	---	---	0	---	Low	Moderate	Low
247:									
Kiehl	---	---	---	---	0	---	Low	Moderate	Low
248:									
Koepke	Dense material	40-60	---	Noncemented	0	---	Moderate	High	Low
249:									
Lakesol	---	---	---	---	0	---	Moderate	Moderate	Low
250:									
Lithic Xerorthents	Bedrock (lithic)	4-10	---	Indurated	0	---	Moderate	Moderate	Low
Baldknob	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
251:									
Lithic Xerorthents	Bedrock (lithic)	4-10	---	Indurated	0	---	Moderate	Moderate	Low
Baldknob	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
252:									
Logy	---	---	---	---	0	---	Moderate	Moderate	Low
253:									
Loony	Dense material	20-40	---	Noncemented	0	---	High	Moderate	Low
254:									
Lostcreek	---	---	---	---	0	---	High	Moderate	Low
255:									
Louiecreek	---	---	---	---	0	---	Moderate	Moderate	Low
256:									
Louploup	Dense material	40-60	---	Noncemented	0	---	Moderate	Moderate	Low
257:									
Louploup	Dense material	40-60	---	Noncemented	0	---	Moderate	Moderate	Low
258:									
Lynxcreek	---	---	---	---	0	---	High	Moderate	Low
259:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
260:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
261:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
262:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
263:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
264:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
265:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
266:									
Malott	Duripan	40-60	1-11	Weakly cemented	0	---	Moderate	High	Low
Torriorthents	---	---	---	---	0	---	Moderate	High	Low
267:									
Manley	Dense material	20-40	---	Noncemented	0	---	High	Moderate	Moderate
268:									
Manley	Dense material	20-40	---	Noncemented	0	---	High	Moderate	Moderate
269:									
Manley	Dense material	20-40	---	Noncemented	0	---	High	Moderate	Moderate
270:									
Manley	Dense material	20-40	---	Noncemented	0	---	High	Moderate	Moderate
Codylake	Bedrock (paralithic)	40-60	---	Moderately cemented	0	---	High	Moderate	Moderate
271:									
Manley	Dense material	20-40	---	Noncemented	0	---	High	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
272:									
Manley	Dense material	20-40	---	Noncemented	0	---	High	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
273:									
Martella	---	---	---	---	0	---	High	Moderate	Low
274:									
Martella	---	---	---	---	0	---	High	Moderate	Low
275:									
Martella	---	---	---	---	0	---	High	Moderate	Low
276:									
Medisaprists	---	---	---	---	4-10	16-51	High	High	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
277:									
Merkel	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
278:									
Merkel	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
279:									
Merkel	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
280:									
Merkel	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
281:									
Merkel	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
282:									
Mineral	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
283:									
Mineral	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
284:									
Mineral	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
285:									
Mineral	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
286:									
Mineral	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
287:									
Mineral	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
288:									
Mitchellpoint	---	---	---	---	0	---	Moderate	Moderate	Low
289:									
Monse	---	---	---	---	0	---	High	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
290:									
Morical	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
291:									
Morical	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
292:									
Morical	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
293:									
Moscow	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Moderate
294:									
Moscow	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Moderate
295:									
Moses	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	High	Moderate	Moderate
296:									
Moses	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	High	Moderate	Moderate
297:									
Moses	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	High	Moderate	Moderate
298:									
Moses	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	High	Moderate	Moderate
299:									
Narcisse	---	---	---	---	0	---	High	Moderate	Low
300:									
Narcisse	---	---	---	---	0	---	High	Moderate	Low
301:									
Nespelem	Duripan	20-40	1-3	Weakly cemented	0	---	Moderate	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
302:									
Nespelem	Duripan	20-40	1-3	Weakly cemented	0	---	Moderate	High	Low
Nespelem	Duripan	20-40	1-3	Weakly cemented	0	---	Moderate	High	Low
303:									
Nespelem	Duripan	20-40	1-3	Weakly cemented	0	---	Moderate	High	Low
Emdent	---	---	---	---	0	---	High	High	Moderate
304:									
Nespelem	Duripan	20-40	1-3	Weakly cemented	0	---	Moderate	High	Low
Typic Xerorthents	---	---	---	---	0	---	Moderate	High	Low
305:									
Neuske	Dense material	40-60	---	Noncemented	0	---	Moderate	Moderate	Low
306:									
Neuske	Dense material	40-60	---	Noncemented	0	---	Moderate	Moderate	Low
307:									
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
308:									
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
309:									
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
310:									
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
311:									
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Nevine	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
312:									
Newbell	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Moderate
313:									
Newbell	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Moderate
314:									
Newbell	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Moderate
315:									
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
316:									
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
317:									
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Johntom	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
318:									
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Johntom	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
319:									
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Louiecreek	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
320:									
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Louiecreek	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
321:									
Northstar	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
322:									
Ohscow	---	---	---	---	0	---	Moderate	Moderate	Low
323:									
Ohscow	---	---	---	---	0	---	Moderate	Moderate	Low
324:									
Ohscow	---	---	---	---	0	---	Moderate	Moderate	Low
325:									
Ohscow	---	---	---	---	0	---	Moderate	Moderate	Low
326:									
Okanogan	---	---	---	---	0	---	Moderate	High	Low
327:									
Omak	Duripan	20-40	1-20	Strongly cemented	0	---	High	Moderate	Low
	Duripan	40-60	4-17	Indurated					
328:									
Owhi	---	---	---	---	0	---	Moderate	Moderate	Low
329:									
Owhi	---	---	---	---	0	---	Moderate	Moderate	Low
330:									
Owhi	---	---	---	---	0	---	Moderate	Moderate	Low
Haley	---	---	---	---	0	---	Moderate	Moderate	Low
331:									
Oxerine	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
332:									
Oxerine	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
333:									
Oxerine	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
334:									
Oxerine	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
335:									
Oxerine	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
336:									
Parmenter	---	---	---	---	0	---	Moderate	Moderate	Low
337:									
Parmenter	---	---	---	---	0	---	Moderate	Moderate	Low
338:									
Parmenter	---	---	---	---	0	---	Moderate	Moderate	Low
339:									
Parmenter	---	---	---	---	0	---	Moderate	Moderate	Low
340:									
Peshastin	---	---	---	---	0	---	Moderate	High	Low
341:									
Peshastin	---	---	---	---	0	---	Moderate	High	Low
342:									
Peshastin	---	---	---	---	0	---	Moderate	High	Low
343:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
344:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
345:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
346:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
347:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
348:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
349:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
350:									
Phoebe	---	---	---	---	0	---	Moderate	Moderate	Low
Dehart	---	---	---	---	0	---	Moderate	Moderate	Low
351:									
Picard	---	---	---	---	0	---	Moderate	Moderate	Low
352:									
Picard	---	---	---	---	0	---	Moderate	Moderate	Low
353:									
Pits	---	---	---	---	0	---	---	---	---
354:									
Pogue	---	---	---	---	0	---	Moderate	Moderate	Low
355:									
Pogue	---	---	---	---	0	---	Moderate	Moderate	Low
356:									
Pogue	---	---	---	---	0	---	Moderate	Moderate	Low
357:									
Pogue	---	---	---	---	0	---	Moderate	Moderate	Low
358:									
Pogue	---	---	---	---	0	---	Moderate	Moderate	Low
359:									
Pogue	---	---	---	---	0	---	Moderate	Moderate	Low
360:									
Poween	---	---	---	---	0	---	High	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
361:									
Quincy	---	---	---	---	0	---	Low	High	Low
362:									
Quincy	---	---	---	---	0	---	Low	High	Low
363:									
Quincy	---	---	---	---	0	---	Low	High	Low
364:									
Quincy	---	---	---	---	0	---	Low	High	Low
365:									
Quincy	---	---	---	---	0	---	Low	High	Low
366:									
Quincy	---	---	---	---	0	---	Low	High	Low
367:									
Quincy	---	---	---	---	0	---	Low	High	Low
Aeneas	---	---	---	---	0	---	Moderate	Moderate	Low
368:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
369:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
370:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rufus	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
371:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rufus	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
372:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rufus	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
373:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rufus	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
374:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rufus	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
375:									
Raisio	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rufus	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
376:									
Ralsen	---	---	---	---	0	---	High	High	Low
377:									
Ratlake	Duripan	10-20	4-17	Indurated	0	---	High	High	High
378:									
Reardan	---	---	---	---	0	---	Moderate	High	Low
379:									
Reardan	---	---	---	---	0	---	Moderate	High	Low
380:									
Rebecca	---	---	---	---	0	---	Moderate	Moderate	Low
381:									
Rebecca	---	---	---	---	0	---	Moderate	Moderate	Low
382:									
Renha	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	High	Low
383:									
Renha	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	High	Low
384:									
Renha	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	High	Low
Oxerine	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
385:									
Republic	---	---	---	---	0	---	Moderate	High	Low
386:									
Republic	---	---	---	---	0	---	Moderate	High	Low
387:									
Republic	---	---	---	---	0	---	Moderate	High	Low
388:									
Resner	---	---	---	---	0	---	High	Moderate	Moderate
389:									
Resner	---	---	---	---	0	---	High	Moderate	Moderate
390:									
Ret	---	---	---	---	0	---	High	Moderate	Low
391:									
Riverwash	---	---	---	---	0	---	None	---	---
392:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
393:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Chumstick	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Moderate
394:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Chumstick	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Moderate
395:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Mineral	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
396:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Rufus	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
397:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Soaplake	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
398:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Swakane	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
399:									
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Vanbrunt	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
400:									
Roosevelt	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Soaplake	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
401:									
Roosevelt	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Soaplake	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
402:									
Rubble land	---	---	---	---	0	---	None	---	---
403:									
Rubble land	---	---	---	---	0	---	None	---	---
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
404:									
Rubble land	---	---	---	---	0	---	None	---	---
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
Haploxerolls	Bedrock (lithic)	20-80	---	Indurated	0	---	Moderate	Moderate	Low
405:									
Sacheen	---	---	---	---	0	---	Low	Moderate	Moderate

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
406:									
Sacheen	---	---	---	---	0	---	Low	Moderate	Moderate
407:									
Sacheen	---	---	---	---	0	---	Low	Moderate	Moderate
408:									
Sanpoil	---	---	---	---	0	---	High	High	Low
409:									
Sanpoil	---	---	---	---	0	---	High	High	Low
410:									
Scala	---	---	---	---	0	---	Moderate	Moderate	Low
411:									
Sclome	---	---	---	---	0	---	High	High	Low
412:									
Scoap	---	---	---	---	0	---	Moderate	Moderate	Low
413:									
Scoap	---	---	---	---	0	---	Moderate	Moderate	Low
414:									
Scoap	---	---	---	---	0	---	Moderate	Moderate	Low
415:									
Scoap	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
416:									
Scoap	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
417:									
Scrabblers	---	---	---	---	0	---	Low	Moderate	Low
418:									
Scrabblers	---	---	---	---	0	---	Low	Moderate	Low
419:									
Scrabblers	---	---	---	---	0	---	Low	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
420:									
Scrabblers	---	---	---	---	0	---	Low	Moderate	Low
421:									
Sitdown	---	---	---	---	0	---	Moderate	Moderate	Low
422:									
Skaha	---	---	---	---	0	---	Low	Moderate	Low
423:									
Skaha	---	---	---	---	0	---	Low	Moderate	Low
424:									
Skaha	---	---	---	---	0	---	Low	Moderate	Low
425:									
Skaha	---	---	---	---	0	---	Low	Moderate	Low
426:									
Skaha	---	---	---	---	0	---	Low	Moderate	Low
427:									
Skaha	---	---	---	---	0	---	Low	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
428:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
429:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
430:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
431:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
432:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
433:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
434:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
435:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
436:									
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
437:									
Spens	---	---	---	---	0	---	Low	Moderate	Low
438:									
Spens	---	---	---	---	0	---	Low	Moderate	Low
439:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
440:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
441:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
442:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
443:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
444:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
445:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
446:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
447:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
448:									
Spokane	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Skanid	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
449:									
Springdale	---	---	---	---	0	---	Low	Moderate	Moderate
450:									
Springdale	---	---	---	---	0	---	Low	Moderate	Moderate
451:									
Springdale	---	---	---	---	0	---	Low	Moderate	Moderate
452:									
Stapaloop	---	---	---	---	0	---	Moderate	Moderate	Low
453:									
Stapaloop	---	---	---	---	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
454:									
Stapaloop	---	---	---	---	0	---	Moderate	Moderate	Low
455:									
Stepstone	---	---	---	---	0	---	Moderate	Moderate	Low
456:									
Stepstone	---	---	---	---	0	---	Moderate	Moderate	Low
457:									
Stepstone	---	---	---	---	0	---	Moderate	Moderate	Low
458:									
Stepstone	---	---	---	---	0	---	Moderate	Moderate	Low
459:									
Stevens	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
460:									
Stevens	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
461:									
Stevens	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
462:									
Stevens	Dense material	20-40	---	Noncemented	0	---	Moderate	Moderate	Low
463:									
Strat	---	---	---	---	0	---	Moderate	High	Low
464:									
Stubblefield	Duripan	20-40	1-10	Strongly cemented	0	---	Moderate	High	Low
	Dense material	21-41	---	Noncemented					
465:									
Swakane	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
466:									
Swakane	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
467:									
Swakane	Bedrock (lithic)	10-20	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
468:									
Swipkin	---	---	---	---	0	---	Moderate	Moderate	Low
469:									
Swipkin	---	---	---	---	0	---	Moderate	Moderate	Low
470:									
Thout	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
471:									
Thout	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
472:									
Thout	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
473:									
Thout	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
474:									
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
475:									
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
476:									
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
477:									
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
478:									
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
479:									
Timentwa	Duripan	40-60	1-4	Weakly cemented	0	---	Moderate	High	Low
Bakeoven	Bedrock (lithic)	4-10	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
480:									
Togo	---	---	---	---	0	---	High	Moderate	Moderate
481:									
Togo	---	---	---	---	0	---	High	Moderate	Moderate
482:									
Togo	---	---	---	---	0	---	High	Moderate	Moderate
483:									
Togo	---	---	---	---	0	---	High	Moderate	Moderate
484:									
Togo	---	---	---	---	0	---	High	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
485:									
Torboy	---	---	---	---	0	---	Moderate	Moderate	Low
486:									
Torboy	---	---	---	---	0	---	Moderate	Moderate	Low
487:									
Torrifluventic Haploxerolls	---	---	---	---	0	---	Low	High	Low
488:									
Tunkcreek	---	---	---	---	0	---	High	Moderate	Low
489:									
Tunkcreek	---	---	---	---	0	---	High	Moderate	Low
490:									
Tyee	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
491:									
Tyee	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
492:									
Tyee	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
493:									
Tyee	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
Morical	Bedrock (paralithic)	20-40	---	Moderately cemented	0	---	Moderate	Moderate	Low
Tyee	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
494:									
Tyee	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
495:									
Tyee	Bedrock (paralithic)	10-20	---	Moderately cemented	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
496:									
Typic Haplaquolls	---	---	---	---	0	---	High	High	Low
497:									
Typic Xerorthents	---	---	---	---	0	---	Moderate	High	Low
Typic Xerochrepts	---	---	---	---	0	---	Moderate	High	Low
498:									
Ultic Haploxerolls	---	---	---	---	0	---	Moderate	Moderate	Low
499:									
Uncas	---	---	---	---	2-5	5-10	High	High	Low
500:									
Vanbrunt	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
501:									
Vanbrunt	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
502:									
Vanbrunt	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
503:									
Wannacott	Dense material	20-40	---	Noncemented	0	---	Moderate	High	Low
504:									
Wannacott	Dense material	20-40	---	Noncemented	0	---	Moderate	High	Low
505:									
Wapal	---	---	---	---	0	---	Low	Moderate	Low
506:									
Wapal	---	---	---	---	0	---	Low	Moderate	Low
507:									
Wapal	---	---	---	---	0	---	Low	Moderate	Low
508:									
Wapal	---	---	---	---	0	---	Low	Moderate	Low
509:									
Wellscreek	---	---	---	---	0	---	Moderate	Moderate	Low
510:									
Wellscreek	---	---	---	---	0	---	Moderate	Moderate	Low
511:									
Wellscreek	---	---	---	---	0	---	Moderate	Moderate	Low
512:									
Whitestone	---	---	---	---	0	---	Moderate	Moderate	Low
513:									
Whitestone	---	---	---	---	0	---	Moderate	Moderate	Low
514:									
Whitestone	---	---	---	---	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
515:									
Whitestone	---	---	---	---	0	---	Moderate	Moderate	Low
516:									
Whitestone	---	---	---	---	0	---	Moderate	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
517:									
Wilmont	---	---	---	---	0	---	Moderate	Moderate	Low
518:									
Wilmont	---	---	---	---	0	---	Moderate	Moderate	Low
519:									
Wilmont	---	---	---	---	0	---	Moderate	Moderate	Low
520:									
Wilmont	---	---	---	---	0	---	Moderate	Moderate	Low
521:									
Winchester	---	---	---	---	0	---	Low	High	Low
522:									
Winchester	---	---	---	---	0	---	Low	High	Low
523:									
Winchester	---	---	---	---	0	---	Low	High	Low
524:									
Winchester	---	---	---	---	0	---	Low	High	Low
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
525:									
Winthrop	---	---	---	---	0	---	Low	Moderate	Low
526:									
Wynhoff	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
527:									
Wynhoff	Bedrock (lithic)	20-40	---	Indurated	0	---	Moderate	Moderate	Low
528:									
Xeric Torriorthents	---	---	---	---	0	---	Moderate	Moderate	Low

Table 20.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
529:									
Xeric Torriorthents	---	---	---	---	0	---	Moderate	Moderate	Low
530:									
Xerochrepts	---	---	---	---	0	---	Moderate	Moderate	Low
Rubble land	---	---	---	---	0	---	None	---	---
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	0	---	None	---	---
531:									
Water	---	---	---	---	---	---	---	---	---
532:									
Dam	---	---	---	---	---	---	---	---	---

Table 21.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
1:									
Achimin	C								
		Jan-Dec	---	---	---	---	None	---	None
2:									
Achimin	C								
		Jan-Dec	---	---	---	---	None	---	None
Calcic Pachic Haploxerolls	C								
		February	3.5-6.0	>6.0	---	---	None	---	None
		March	3.0-3.5	>6.0	---	---	None	---	None
		April	2.0-3.0	>6.0	---	---	None	---	None
		May	2.0-3.0	>6.0	---	---	None	---	None
		June	3.0-3.5	>6.0	---	---	None	---	None
		July	3.5-6.0	>6.0	---	---	None	---	None
3:									
Aeneas	B								
		Jan-Dec	---	---	---	---	None	---	None
4:									
Aeneas	B								
		Jan-Dec	---	---	---	---	None	---	None
5:									
Ahtanum	D								
		January	1.0-1.3	1.7-3.3	---	---	None	---	None
		February	0.5-1.0	1.7-3.3	---	---	None	---	None
		March	0.0-0.5	1.7-3.3	---	---	None	---	None
		April	0.0-0.5	1.7-3.3	---	---	None	---	None
		May	0.5-1.0	1.7-3.3	---	---	None	---	None
		June	1.0-1.3	1.7-3.3	---	---	None	---	None
		July	1.3-1.7	1.7-3.3	---	---	None	---	None
		August	1.7-2.0	1.7-3.3	---	---	None	---	None
		November	1.7-2.0	1.7-3.3	---	---	None	---	None
		December	1.3-1.7	1.7-3.3	---	---	None	---	None
6:									
Aits	B								
		Jan-Dec	---	---	---	---	None	---	None
7:									
Aits	B								
		Jan-Dec	---	---	---	---	None	---	None
8:									
Aits	B								
		Jan-Dec	---	---	---	---	None	---	None
9:									
Anders	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table					Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency		
			Ft	*Ft*	*Ft*						
10:											
Andic Cryaquepts	D										
		January	1.8-2.3	>6.0	---	---	None	---	None		
		February	1.4-1.8	>6.0	---	---	None	---	None		
		March	0.8-1.4	>6.0	---	---	None	---	None		
		April	0.0-0.8	>6.0	---	---	None	---	None		
		May	0.8-1.4	>6.0	---	---	None	---	None		
		June	1.4-1.8	>6.0	---	---	None	---	None		
		July	1.8-2.3	>6.0	---	---	None	---	None		
		August	2.3-6.0	>6.0	---	---	None	---	None		
		December	2.3-6.0	>6.0	---	---	None	---	None		
11:											
Annum	B										
		Jan-Dec	---	---	---	---	None	---	None		
12:											
Annum	B										
		Jan-Dec	---	---	---	---	None	---	None		
13:											
Annum	B										
		Jan-Dec	---	---	---	---	None	---	None		
Annum	B										
		Jan-Dec	---	---	---	---	None	---	None		
14:											
Apex	B										
		Jan-Dec	---	---	---	---	None	---	None		
15:											
Apex	B										
		Jan-Dec	---	---	---	---	None	---	None		
16:											
Apex	B										
		Jan-Dec	---	---	---	---	None	---	None		
17:											
Apex	B										
		Jan-Dec	---	---	---	---	None	---	None		
18:											
Apex	B										
		Jan-Dec	---	---	---	---	None	---	None		
19:											
Apex	B										
		Jan-Dec	---	---	---	---	None	---	None		
20:											
Aquic Xerofluvents	C										
		January	4.3-6.0	>6.0	---	---	None	---	None		
		February	3.3-4.3	>6.0	---	---	None	Brief	Occasional		
		March	2.9-3.3	>6.0	---	---	None	Brief	Occasional		
		April	1.2-2.1	>6.0	---	---	None	Brief	Occasional		
		May	2.1-2.9	>6.0	---	---	None	Brief	Occasional		
		June	3.3-4.3	>6.0	---	---	None	---	None		
		July	4.3-6.0	>6.0	---	---	None	---	None		

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency		Duration	Frequency
			Ft	*Ft*	*Ft*					
21:										
Aquic Xerofluvents	C									
		January	4.3-6.0	>6.0	---	---	None		---	None
		February	3.3-4.3	>6.0	---	---	None		Brief	Occasional
		March	2.9-3.3	>6.0	---	---	None		Brief	Occasional
		April	1.2-2.1	>6.0	---	---	None		Brief	Occasional
		May	2.1-2.9	>6.0	---	---	None		Brief	Occasional
		June	3.3-4.3	>6.0	---	---	None		---	None
		July	4.3-6.0	>6.0	---	---	None		---	None
22:										
Aquic Xerofluvents	C									
		January	4.3-6.0	>6.0	---	---	None		---	None
		February	3.3-4.3	>6.0	---	---	None		Brief	Occasional
		March	2.9-3.3	>6.0	---	---	None		Brief	Occasional
		April	1.2-2.1	>6.0	---	---	None		Brief	Occasional
		May	2.1-2.9	>6.0	---	---	None		Brief	Occasional
		June	3.3-4.3	>6.0	---	---	None		---	None
		July	4.3-6.0	>6.0	---	---	None		---	None
23:										
Badge	B									
		Jan-Dec	---	---	---	---	None		---	None
24:										
Badge	B									
		Jan-Dec	---	---	---	---	None		---	None
Rubble land	A									
		Jan-Dec	---	---	---	---	None		---	None
25:										
Badland	C									
		Jan-Dec	---	---	---	---	None		---	None
26:										
Bakeoven	D									
		Jan-Dec	---	---	---	---	None		---	None
27:										
Bakeoven	D									
		Jan-Dec	---	---	---	---	None		---	None
Olical	B									
		Jan-Dec	---	---	---	---	None		---	None
28:										
Bakeoven	D									
		Jan-Dec	---	---	---	---	None		---	None
Timentwa	B									
		Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D									
		Jan-Dec	---	---	---	---	None		---	None
29:										
Baldknob	D									
		Jan-Dec	---	---	---	---	None		---	None
Thout	C									
		Jan-Dec	---	---	---	---	None		---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
29:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
30:									
Baldknob	D								
		Jan-Dec	---	---	---	---	None	---	None
Thout	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
31:									
Barnellcreek	C								
		January	3.5-6.0	>6.0	---	---	None	---	None
		February	2.2-3.5	>6.0	---	---	None	---	None
		March	2.2-3.5	>6.0	---	---	None	---	None
		April	2.2-3.5	>6.0	---	---	None	---	None
		May	3.5-6.0	>6.0	---	---	None	---	None
32:									
Bearspring	B								
		Jan-Dec	---	---	---	---	None	---	None
33:									
Bearspring	B								
		Jan-Dec	---	---	---	---	None	---	None
34:									
Bernhill	B								
		Jan-Dec	---	---	---	---	None	---	None
35:									
Bernhill	B								
		Jan-Dec	---	---	---	---	None	---	None
36:									
Beverly	A								
		Jan-Dec	---	---	---	---	None	---	None
37:									
Bisbee	A								
		Jan-Dec	---	---	---	---	None	---	None
38:									
Bisbee	A								
		Jan-Dec	---	---	---	---	None	---	None
39:									
Boesel	C								
		February	2.5-6.0	>6.0	---	---	None	Brief	Occasional
		March	2.5-6.0	>6.0	---	---	None	Brief	Occasional
		April	2.5-6.0	>6.0	---	---	None	Brief	Occasional
		May	2.5-6.0	>6.0	---	---	None	Brief	Occasional
40:									
Bong	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
41:									
Bong	A								
		Jan-Dec	---	---	---	---	None	---	None
42:									
Bong	A								
		Jan-Dec	---	---	---	---	None	---	None
43:									
Borgeau	B								
		Jan-Dec	---	---	---	---	None	---	None
44:									
Borgeau	B								
		Jan-Dec	---	---	---	---	None	---	None
45:									
Borgeau	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
46:									
Borosaprists	D								
		January	0.0-0.7	>6.0	---	---	None	---	None
		February	0.0-0.7	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0-0.7	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0-0.7	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0-0.7	>6.0	0.0-1.0	Long	Frequent	---	None
		June	0.0-0.7	>6.0	---	---	None	---	None
		July	0.7-1.5	>6.0	---	---	None	---	None
		August	1.5-2.8	>6.0	---	---	None	---	None
		September	0.7-1.5	>6.0	---	---	None	---	None
		October	0.0-0.7	>6.0	---	---	None	---	None
		November	0.0-0.7	>6.0	---	---	None	---	None
		December	0.0-0.7	>6.0	---	---	None	---	None
47:									
Bossburg	D								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.1-1.5	>6.0	---	---	None	Long	Frequent
		March	0.5-1.1	>6.0	---	---	None	Long	Frequent
		April	0.0-0.5	>6.0	---	---	None	Long	Frequent
		May	0.0-0.5	>6.0	---	---	None	Long	Frequent
		June	0.5-1.1	>6.0	---	---	None	---	None
		July	1.1-1.5	>6.0	---	---	None	---	None
		August	1.5-2.0	>6.0	---	---	None	---	None
		September	2.0-2.4	>6.0	---	---	None	---	None
		October	2.0-2.4	>6.0	---	---	None	---	None
		November	2.0-2.4	>6.0	---	---	None	---	None
		December	2.0-2.4	>6.0	---	---	None	---	None
48:									
Broadax	B								
		Jan-Dec	---	---	---	---	None	---	None
49:									
Broadax	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
50:									
Brusher	B								
		Jan-Dec	---	---	---	---	None	---	None
51:									
Brusher	B								
		Jan-Dec	---	---	---	---	None	---	None
52:									
Brusher	B								
		Jan-Dec	---	---	---	---	None	---	None
53:									
Brusher	B								
		Jan-Dec	---	---	---	---	None	---	None
54:									
Buhrig	C								
		Jan-Dec	---	---	---	---	None	---	None
55:									
Buhrig	C								
		Jan-Dec	---	---	---	---	None	---	None
56:									
Buhrig	C								
		Jan-Dec	---	---	---	---	None	---	None
57:									
Buhrig	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
58:									
Buhrig	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
59:									
Canteen	B								
		Jan-Dec	---	---	---	---	None	---	None
60:									
Canteen	B								
		Jan-Dec	---	---	---	---	None	---	None
61:									
Canteen	B								
		Jan-Dec	---	---	---	---	None	---	None
62:									
Canteen	B								
		Jan-Dec	---	---	---	---	None	---	None
63:									
Capoose	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
64:									
Capoose	C	Jan-Dec	---	---	---	---	None	---	None
65:									
Capoose	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
66:									
Capoose	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
67:									
Cashmere	B	Jan-Dec	---	---	---	---	None	---	None
68:									
Cashmere	B	Jan-Dec	---	---	---	---	None	---	None
69:									
Cashmere	B	Jan-Dec	---	---	---	---	None	---	None
70:									
Cashmere	B	Jan-Dec	---	---	---	---	None	---	None
71:									
Cashmont	B	Jan-Dec	---	---	---	---	None	---	None
72:									
Cashmont	B	Jan-Dec	---	---	---	---	None	---	None
73:									
Cedonia	B	Jan-Dec	---	---	---	---	None	---	None
74:									
Cedonia	B	Jan-Dec	---	---	---	---	None	---	None
75:									
Cedonia	B	Jan-Dec	---	---	---	---	None	---	None
76:									
Cedonia	B	Jan-Dec	---	---	---	---	None	---	None
77:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
77:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
78:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
79:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
80:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
81:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
82:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
83:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
Brusher	B	Jan-Dec	---	---	---	---	None	---	None
84:									
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
Centralpeak	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
85:									
Chumstick	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
86:									
Chumstick	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
87:									
Codylake	B	Jan-Dec	---	---	---	---	None	---	None
88:									
Codylake	B	Jan-Dec	---	---	---	---	None	---	None
89:									
Codylake	B	Jan-Dec	---	---	---	---	None	---	None
90:									
Colockum	B	Jan-Dec	---	---	---	---	None	---	None
91:									
Colockum	B	Jan-Dec	---	---	---	---	None	---	None
92:									
Colockum	B	Jan-Dec	---	---	---	---	None	---	None
93:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
94:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
95:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
96:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
97:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
98:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
99:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
Bakeoven	D	Jan-Dec	---	---	---	---	None	---	None
100:									
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
101:									
Conconully	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
102:									
Conconully	B								
		Jan-Dec	---	---	---	---	None	---	None
Swakane	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
103:									
Couleedam	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
104:									
Coxlake	D								
		January	2.4-3.2	>6.0	---	---	None	---	None
		February	0.5-2.4	>6.0	---	---	None	Brief	Occasional
		March	0.5-2.4	>6.0	---	---	None	Brief	Occasional
		April	0.5-2.4	>6.0	---	---	None	Brief	Occasional
		May	0.5-2.4	>6.0	---	---	None	Brief	Occasional
		June	2.4-3.2	>6.0	---	---	None	---	None
		July	3.2-4.0	>6.0	---	---	None	---	None
		August	4.0-6.0	>6.0	---	---	None	---	None
		November	4.0-6.0	>6.0	---	---	None	---	None
		December	3.2-4.0	>6.0	---	---	None	---	None
105:									
Cryofluvents	C								
		March	2.5-6.0	>6.0	---	---	None	Brief	Occasional
		April	1.7-2.5	>6.0	---	---	None	Brief	Occasional
		May	1.7-2.5	>6.0	---	---	None	Brief	Occasional
		June	2.5-6.0	>6.0	---	---	None	Brief	Occasional
106:									
Cubcreek	C								
		January	3.7-6.0	>6.0	---	---	None	---	None
		February	2.1-3.7	>6.0	---	---	None	Brief	Occasional
		March	2.1-3.7	>6.0	---	---	None	Brief	Occasional
		April	2.1-3.7	>6.0	---	---	None	Brief	Occasional
		May	2.1-3.7	>6.0	---	---	None	Brief	Occasional
		June	3.7-6.0	>6.0	---	---	None	---	None
107:									
Cumulic Haploxerolls	C								
		February	4.0-6.0	>6.0	---	---	None	---	None
		March	2.5-6.0	>6.0	---	---	None	---	None
		April	2.5-4.0	>6.0	---	---	None	---	None
		May	4.0-6.0	>6.0	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency		Duration	Frequency
			Ft	*Ft*	*Ft*					
108:										
Dart	A	Jan-Dec	---	---	---	---	None		---	None
109:										
Dart	A	Jan-Dec	---	---	---	---	None		---	None
110:										
Dart	A	Jan-Dec	---	---	---	---	None		---	None
Springdale	A	Jan-Dec	---	---	---	---	None		---	None
111:										
Dart	A	Jan-Dec	---	---	---	---	None		---	None
Springdale	A	Jan-Dec	---	---	---	---	None		---	None
112:										
Dehart	B	Jan-Dec	---	---	---	---	None		---	None
113:										
Dehart	B	Jan-Dec	---	---	---	---	None		---	None
114:										
Dehart	B	Jan-Dec	---	---	---	---	None		---	None
Phoebe	B	Jan-Dec	---	---	---	---	None		---	None
115:										
Dehart	B	Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None		---	None
116:										
Dehart	B	Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None		---	None
117:										
Dinkelman	B	Jan-Dec	---	---	---	---	None		---	None
118:										
Dinkelman	B	Jan-Dec	---	---	---	---	None		---	None
119:										
Dinkelman	B	Jan-Dec	---	---	---	---	None		---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
120:									
Disautel	B	Jan-Dec	---	---	---	---	None	---	None
121:									
Disautel	B	Jan-Dec	---	---	---	---	None	---	None
122:									
Disautel	B	Jan-Dec	---	---	---	---	None	---	None
Nespelem	C	Jan-Dec	---	---	---	---	None	---	None
123:									
Disautel	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
124:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
125:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
126:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
127:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
128:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
129:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
130:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
131:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
132:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None
133:									
Donavan	B	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
133:									
Goldlake	C								
		March	3.1-6.0	>6.0	---	---	None	---	None
		April	3.1-6.0	>6.0	---	---	None	---	None
		May	3.1-6.0	>6.0	---	---	None	---	None
134:									
Donavan	B								
		Jan-Dec	---	---	---	---	None	---	None
Northstar	C								
		Jan-Dec	---	---	---	---	None	---	None
135:									
Donavan	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
136:									
Donavan	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
137:									
Donavan	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
138:									
Donavan	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
139:									
Duleylake	C								
		January	3.1-6.0	>6.0	---	---	None	---	None
		February	2.6-3.1	>6.0	---	---	None	---	None
		March	1.9-2.6	>6.0	---	---	None	---	None
		April	1.9-2.6	>6.0	---	---	None	---	None
		May	2.6-3.1	>6.0	---	---	None	---	None
		June	3.1-6.0	>6.0	---	---	None	---	None
140:									
Elbowlake	B								
		Jan-Dec	---	---	---	---	None	---	None
141:									
Elbowlake	B								
		Jan-Dec	---	---	---	---	None	---	None
142:									
Elbowlake	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
143:									
Elbowlake	B								
		Jan-Dec	---	---	---	---	None	---	None
144:									
Elbowlake	B								
		Jan-Dec	---	---	---	---	None	---	None
145:									
Elbowlake	B								
		Jan-Dec	---	---	---	---	None	---	None
146:									
Ellisforde	B								
		Jan-Dec	---	---	---	---	None	---	None
147:									
Ellisforde	B								
		Jan-Dec	---	---	---	---	None	---	None
148:									
Ellisforde	B								
		Jan-Dec	---	---	---	---	None	---	None
149:									
Elvedere	C								
		Jan-Dec	---	---	---	---	None	---	None
150:									
Elvedere	C								
		Jan-Dec	---	---	---	---	None	---	None
151:									
Elvedere	C								
		Jan-Dec	---	---	---	---	None	---	None
152:									
Elvedere	C								
		Jan-Dec	---	---	---	---	None	---	None
Leahy	C								
		February	2.3-6.0	>6.0	---	---	None	---	None
		March	2.3-6.0	>6.0	---	---	None	---	None
		April	2.3-6.0	>6.0	---	---	None	---	None
153:									
Emdent	D								
		January	0.5-1.1	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		June	0.5-1.1	>6.0	---	---	None	---	None
		July	1.1-1.5	>6.0	---	---	None	---	None
		August	1.1-1.5	>6.0	---	---	None	---	None
		September	1.1-1.5	>6.0	---	---	None	---	None
		October	1.1-1.5	>6.0	---	---	None	---	None
		November	1.1-1.5	>6.0	---	---	None	---	None
		December	1.1-1.5	>6.0	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency		Duration	Frequency
			Ft	*Ft*	*Ft*					
154:										
Emdent	D									
		January	0.5-1.1	>6.0	---	---	None		---	None
		February	0.5-1.1	>6.0	---	---	None		---	Rare
		March	0.0-0.5	>6.0	0.0-1.0	Long	Frequent		---	Rare
		April	0.0-0.5	>6.0	0.0-1.0	Long	Frequent		---	Rare
		May	0.0-0.5	>6.0	0.0-1.0	Long	Frequent		---	Rare
		June	0.5-1.1	>6.0	---	---	None		---	None
		July	1.1-1.5	>6.0	---	---	None		---	None
		August	1.1-1.5	>6.0	---	---	None		---	None
		September	1.1-1.5	>6.0	---	---	None		---	None
		October	1.1-1.5	>6.0	---	---	None		---	None
		November	1.1-1.5	>6.0	---	---	None		---	None
		December	1.1-1.5	>6.0	---	---	None		---	None
155:										
Ewall	A									
		Jan-Dec	---	---	---	---	None		---	None
156:										
Ewall	A									
		Jan-Dec	---	---	---	---	None		---	None
157:										
Ewall	A									
		Jan-Dec	---	---	---	---	None		---	None
158:										
Ewall	A									
		Jan-Dec	---	---	---	---	None		---	None
159:										
Ewall	A									
		Jan-Dec	---	---	---	---	None		---	None
160:										
Farrell	B									
		Jan-Dec	---	---	---	---	None		---	None
161:										
Farrell	B									
		Jan-Dec	---	---	---	---	None		---	None
162:										
Farrell	B									
		Jan-Dec	---	---	---	---	None		---	None
163:										
Farrell	B									
		Jan-Dec	---	---	---	---	None		---	None
164:										
Fivelakes	B									
		Jan-Dec	---	---	---	---	None		---	None
165:										
Fivelakes	C									
		March	2.5-6.0	>6.0	---	---	None		---	Rare
		April	2.5-6.0	>6.0	---	---	None		---	Rare

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
166:									
Fivelakes	B	Jan-Dec	---	---	---	---	None	---	None
167:									
Fivelakes	B	Jan-Dec	---	---	---	---	None	---	None
168:									
Fivelakes	B	Jan-Dec	---	---	---	---	None	---	None
169:									
Friedlander	C	Jan-Dec	---	---	---	---	None	---	None
170:									
Friedlander	C	Jan-Dec	---	---	---	---	None	---	None
171:									
Friedlander	C	Jan-Dec	---	---	---	---	None	---	None
172:									
Garrison	B	Jan-Dec	---	---	---	---	None	---	None
173:									
Garrison	B	Jan-Dec	---	---	---	---	None	---	None
174:									
Garrison	B	Jan-Dec	---	---	---	---	None	---	None
175:									
Georgecreek	B	Jan-Dec	---	---	---	---	None	---	None
176:									
Georgecreek	B	Jan-Dec	---	---	---	---	None	---	None
177:									
Georgecreek	B	Jan-Dec	---	---	---	---	None	---	None
178:									
Georgecreek	B	Jan-Dec	---	---	---	---	None	---	None
179:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
180:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
181:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
182:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
183:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
184:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
185:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
Conconully	B	Jan-Dec	---	---	---	---	None	---	None
186:									
Ginnis	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
187:									
Glenrose	B	Jan-Dec	---	---	---	---	None	---	None
188:									
Glenrose	B	Jan-Dec	---	---	---	---	None	---	None
189:									
Goddard	B	Jan-Dec	---	---	---	---	None	---	None
190:									
Goddard	B	Jan-Dec	---	---	---	---	None	---	None
191:									
Goddard	B	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
192:									
Goldlake	C								
		March	3.1-6.0	>6.0	---	---	None	---	None
		April	3.1-6.0	>6.0	---	---	None	---	None
		May	3.1-6.0	>6.0	---	---	None	---	None
193:									
Gooseflats	D								
		January	0.6-3.4	3.3-6.0	---	---	None	---	None
		February	0.0-0.6	3.3-6.0	---	---	None	---	None
		March	0.0-0.6	3.3-6.0	0.0-0.5	Long	Frequent	---	None
		April	0.0-0.6	3.3-6.0	0.0-0.5	Long	Frequent	---	None
		May	0.6-3.4	3.3-6.0	---	---	None	---	None
Gooseflats	D								
		January	2.3-6.0	>6.0	---	---	None	---	None
		February	0.6-2.3	>6.0	---	---	None	---	None
		March	0.0-0.6	>6.0	---	---	None	---	None
		April	0.6-2.3	>6.0	---	---	None	---	None
		May	2.3-6.0	>6.0	---	---	None	---	None
194:									
Growden	B								
		Jan-Dec	---	---	---	---	None	---	None
195:									
Hadencreek	C								
		January	3.3-6.0	>6.0	---	---	None	---	None
		February	2.7-3.3	>6.0	---	---	None	---	None
		March	1.5-2.7	>6.0	---	---	None	---	None
		April	2.7-3.3	>6.0	---	---	None	---	None
		May	2.7-3.3	>6.0	---	---	None	---	None
196:									
Haley	B								
		Jan-Dec	---	---	---	---	None	---	None
197:									
Haley	B								
		Jan-Dec	---	---	---	---	None	---	None
198:									
Haley	B								
		Jan-Dec	---	---	---	---	None	---	None
199:									
Hallcreek	A								
		Jan-Dec	---	---	---	---	None	---	None
200:									
Haploxerolls	B								
		Jan-Dec	---	---	---	---	None	---	None
201:									
Hartill	C								
		Jan-Dec	---	---	---	---	None	---	None
202:									
Hartill	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
203:									
Hellgate	B								
		Jan-Dec	---	---	---	---	None	---	None
204:									
Hellgate	B								
		Jan-Dec	---	---	---	---	None	---	None
205:									
Henneway	B								
		Jan-Dec	---	---	---	---	None	---	None
206:									
Henneway	B								
		Jan-Dec	---	---	---	---	None	---	None
207:									
Henneway	B								
		Jan-Dec	---	---	---	---	None	---	None
208:									
Heytou	B								
		Jan-Dec	---	---	---	---	None	---	None
Stubblefield	C								
		Jan-Dec	---	---	---	---	None	---	None
209:									
Histosols	D								
		January	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		July	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		August	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0-0.3	>6.0	---	---	None	---	None
		October	0.0-0.3	>6.0	---	---	None	---	None
		November	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0-0.3	>6.0	0.0-1.0	Very long	Frequent	---	None
210:									
Hobohill	A								
		Jan-Dec	---	---	---	---	None	---	None
211:									
Hobohill	A								
		Jan-Dec	---	---	---	---	None	---	None
212:									
Hodgson	C								
		January	3.9-6.0	>6.0	---	---	None	---	None
		February	2.3-3.9	>6.0	---	---	None	---	None
		March	1.4-2.3	>6.0	---	---	None	---	None
		April	2.3-3.9	>6.0	---	---	None	---	None
		May	3.9-6.0	>6.0	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
213:									
Hodgson	C								
		January	3.9-6.0	>6.0	---	---	None	---	None
		February	2.3-3.9	>6.0	---	---	None	---	None
		March	1.4-2.3	>6.0	---	---	None	---	None
		April	2.3-3.9	>6.0	---	---	None	---	None
		May	3.9-6.0	>6.0	---	---	None	---	None
214:									
Hodgson	C								
		January	3.9-6.0	>6.0	---	---	None	---	None
		February	2.3-3.9	>6.0	---	---	None	---	None
		March	1.4-2.3	>6.0	---	---	None	---	None
		April	2.3-3.9	>6.0	---	---	None	---	None
		May	3.9-6.0	>6.0	---	---	None	---	None
215:									
Hodgson	C								
		January	3.9-6.0	>6.0	---	---	None	---	None
		February	2.3-3.9	>6.0	---	---	None	---	None
		March	1.4-2.3	>6.0	---	---	None	---	None
		April	2.3-3.9	>6.0	---	---	None	---	None
		May	3.9-6.0	>6.0	---	---	None	---	None
216:									
Hudnut	B								
		Jan-Dec	---	---	---	---	None	---	None
217:									
Hudnut	B								
		Jan-Dec	---	---	---	---	None	---	None
218:									
Hunters	B								
		Jan-Dec	---	---	---	---	None	---	None
219:									
Hunters	B								
		Jan-Dec	---	---	---	---	None	---	None
220:									
Inchelium	C								
		January	4.3-6.0	>6.0	---	---	None	---	None
		February	3.5-4.3	>6.0	---	---	None	---	None
		March	2.3-3.5	>6.0	---	---	None	---	None
		April	2.3-3.5	>6.0	---	---	None	---	None
		May	3.5-4.3	>6.0	---	---	None	---	None
		June	4.3-6.0	>6.0	---	---	None	---	None
221:									
Inchelium	C								
		January	4.3-6.0	>6.0	---	---	None	---	None
		February	3.5-4.3	>6.0	---	---	None	---	None
		March	2.3-3.5	>6.0	---	---	None	---	None
		April	2.3-3.5	>6.0	---	---	None	---	None
		May	3.5-4.3	>6.0	---	---	None	---	None
		June	4.3-6.0	>6.0	---	---	None	---	None
222:									
Inkler	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
223:									
Inkler	B								
		Jan-Dec	---	---	---	---	None	---	None
224:									
Inkler	B								
		Jan-Dec	---	---	---	---	None	---	None
225:									
Inkler	B								
		Jan-Dec	---	---	---	---	None	---	None
Baldknob	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
226:									
Inkler	B								
		Jan-Dec	---	---	---	---	None	---	None
Baldknob	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
227:									
Inkler	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
228:									
Inkler	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
229:									
Jimcreek	C								
		January	3.0-3.8	>6.0	---	---	None	---	None
		February	1.6-3.0	>6.0	---	---	None	---	None
		March	0.3-1.6	>6.0	---	---	None	---	None
		April	0.3-1.6	>6.0	---	---	None	---	None
		May	1.6-3.0	>6.0	---	---	None	---	None
		June	3.0-3.8	>6.0	---	---	None	---	None
		July	3.8-6.0	>6.0	---	---	None	---	None
		December	3.8-6.0	>6.0	---	---	None	---	None
230:									
Johntom	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
Rubble land	A	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
231:									
Karamin	A								
		Jan-Dec	---	---	---	---	None	---	None
232:									
Karamin	A								
		Jan-Dec	---	---	---	---	None	---	None
233:									
Karamin	A								
		Jan-Dec	---	---	---	---	None	---	None
234:									
Kartar	B								
		Jan-Dec	---	---	---	---	None	---	None
235:									
Kellerbutte	B								
		Jan-Dec	---	---	---	---	None	---	None
236:									
Kellerbutte	B								
		Jan-Dec	---	---	---	---	None	---	None
237:									
Kenotrail	C								
		Jan-Dec	---	---	---	---	None	---	None
238:									
Kewach	C								
		January	3.0-3.5	>6.0	---	---	None	---	None
		February	2.4-3.0	>6.0	---	---	None	---	None
		March	1.3-2.4	>6.0	---	---	None	---	None
		April	2.4-3.0	>6.0	---	---	None	---	None
		May	3.0-3.5	>6.0	---	---	None	---	None
		June	3.5-6.0	>6.0	---	---	None	---	None
		December	3.5-6.0	>6.0	---	---	None	---	None
239:									
Kewach	C								
		January	3.0-3.5	>6.0	---	---	None	---	None
		February	2.4-3.0	>6.0	---	---	None	---	None
		March	1.3-2.4	>6.0	---	---	None	---	None
		April	2.4-3.0	>6.0	---	---	None	---	None
		May	3.0-3.5	>6.0	---	---	None	---	None
		June	3.5-6.0	>6.0	---	---	None	---	None
		December	3.5-6.0	>6.0	---	---	None	---	None
240:									
Kewach	C								
		January	3.0-3.5	>6.0	---	---	None	---	None
		February	2.4-3.0	>6.0	---	---	None	---	None
		March	1.3-2.4	>6.0	---	---	None	---	None
		April	2.4-3.0	>6.0	---	---	None	---	None
		May	3.0-3.5	>6.0	---	---	None	---	None
		June	3.5-6.0	>6.0	---	---	None	---	None
		December	3.5-6.0	>6.0	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
241:									
Kewach	C								
		January	3.0-3.5	>6.0	---	---	None	---	None
		February	2.4-3.0	>6.0	---	---	None	---	None
		March	1.3-2.4	>6.0	---	---	None	---	None
		April	2.4-3.0	>6.0	---	---	None	---	None
		May	3.0-3.5	>6.0	---	---	None	---	None
		June	3.5-6.0	>6.0	---	---	None	---	None
		December	3.5-6.0	>6.0	---	---	None	---	None
242:									
Kiehl	B								
		Jan-Dec	---	---	---	---	None	---	None
243:									
Kiehl	B								
		Jan-Dec	---	---	---	---	None	---	None
244:									
Kiehl	B								
		Jan-Dec	---	---	---	---	None	---	None
245:									
Kiehl	B								
		Jan-Dec	---	---	---	---	None	---	None
246:									
Kiehl	B								
		Jan-Dec	---	---	---	---	None	---	None
247:									
Kiehl	B								
		Jan-Dec	---	---	---	---	None	---	None
248:									
Koepke	B								
		Jan-Dec	---	---	---	---	None	---	None
249:									
Lakesol	B								
		Jan-Dec	---	---	---	---	None	---	None
250:									
Lithic Xerorthents	D								
		Jan-Dec	---	---	---	---	None	---	None
Baldknob	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
251:									
Lithic Xerorthents	D								
		Jan-Dec	---	---	---	---	None	---	None
Baldknob	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
252:									
Logy	B								
		Jan-Dec	---	---	---	---	None	---	None
253:									
Loony	C								
		February	2.3-6.0	>6.0	---	---	None	---	None
		March	2.3-6.0	>6.0	---	---	None	---	None
		April	2.3-6.0	>6.0	---	---	None	---	None
		May	2.3-6.0	>6.0	---	---	None	---	None
254:									
Lostcreek	C								
		February	3.5-6.0	>6.0	---	---	None	---	None
		March	3.5-6.0	>6.0	---	---	None	---	None
		April	3.5-6.0	>6.0	---	---	None	---	None
		May	3.5-6.0	>6.0	---	---	None	---	None
		June	3.5-6.0	>6.0	---	---	None	---	None
255:									
Louiecreek	B								
		Jan-Dec	---	---	---	---	None	---	None
256:									
Louploup	B								
		Jan-Dec	---	---	---	---	None	---	None
257:									
Louploup	B								
		Jan-Dec	---	---	---	---	None	---	None
258:									
Lynxcreek	C								
		February	3.0-6.0	>6.0	---	---	None	---	None
		March	3.0-6.0	>6.0	---	---	None	---	None
		April	3.0-6.0	>6.0	---	---	None	---	None
		May	3.0-6.0	>6.0	---	---	None	---	None
259:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None
260:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None
261:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None
262:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None
263:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None
264:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
264:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
265:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
266:									
Malott	B								
		Jan-Dec	---	---	---	---	None	---	None
Torriorthents	B								
		Jan-Dec	---	---	---	---	None	---	None
267:									
Manley	B								
		Jan-Dec	---	---	---	---	None	---	None
268:									
Manley	B								
		Jan-Dec	---	---	---	---	None	---	None
269:									
Manley	B								
		Jan-Dec	---	---	---	---	None	---	None
270:									
Manley	B								
		Jan-Dec	---	---	---	---	None	---	None
Codylake	B								
		Jan-Dec	---	---	---	---	None	---	None
271:									
Manley	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
272:									
Manley	B								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
273:									
Martella	C								
		January	3.8-4.4	>6.0	---	---	None	---	None
		February	2.8-3.8	>6.0	---	---	None	---	None
		March	1.9-2.8	>6.0	---	---	None	---	None
		April	2.8-3.8	>6.0	---	---	None	---	None
		May	3.8-4.4	>6.0	---	---	None	---	None
		June	4.4-6.0	>6.0	---	---	None	---	None
		December	4.4-5.0	>6.0	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
274:									
Martella	C								
		January	3.8-4.4	>6.0	---	---	None	---	None
		February	2.8-3.8	>6.0	---	---	None	---	None
		March	1.9-2.8	>6.0	---	---	None	---	None
		April	2.8-3.8	>6.0	---	---	None	---	None
		May	3.8-4.4	>6.0	---	---	None	---	None
		June	4.4-5.0	>6.0	---	---	None	---	None
		December	4.4-6.0	>6.0	---	---	None	---	None
275:									
Martella	C								
		January	3.8-4.4	>6.0	---	---	None	---	None
		February	2.8-3.8	>6.0	---	---	None	---	None
		March	1.9-2.8	>6.0	---	---	None	---	None
		April	2.8-3.8	>6.0	---	---	None	---	None
		May	3.8-4.4	>6.0	---	---	None	---	None
		June	4.4-5.0	>6.0	---	---	None	---	None
		December	4.4-5.0	>6.0	---	---	None	---	None
			4.4-6.0						
276:									
Medisaprists	D								
		January	0.8-3.0	>6.0	---	---	None	---	None
		February	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.8	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.8	>6.0	---	---	None	---	None
		June	0.8-3.0	>6.0	---	---	None	---	None
		July	0.8-3.0	>6.0	---	---	None	---	None
		August	0.8-3.0	>6.0	---	---	None	---	None
		September	0.8-3.0	>6.0	---	---	None	---	None
		October	0.8-3.0	>6.0	---	---	None	---	None
		November	0.8-3.0	>6.0	---	---	None	---	None
		December	0.8-3.0	>6.0	---	---	None	---	None
277:									
Merkel	B								
		Jan-Dec	---	---	---	---	None	---	None
278:									
Merkel	B								
		Jan-Dec	---	---	---	---	None	---	None
279:									
Merkel	B								
		Jan-Dec	---	---	---	---	None	---	None
280:									
Merkel	B								
		Jan-Dec	---	---	---	---	None	---	None
281:									
Merkel	B								
		Jan-Dec	---	---	---	---	None	---	None
282:									
Mineral	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
283:									
Mineral	C								
		Jan-Dec	---	---	---	---	None	---	None
284:									
Mineral	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
285:									
Mineral	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
286:									
Mineral	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
287:									
Mineral	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
288:									
Mitchellpoint	B								
		Jan-Dec	---	---	---	---	None	---	None
289:									
Monse	C								
		January	3.3-3.7	>6.0	---	---	None	---	None
		February	2.4-2.8	>6.0	---	---	None	---	None
		March	1.6-2.4	>6.0	---	---	None	---	None
		April	1.6-2.4	>6.0	---	---	None	---	None
		May	2.4-2.8	>6.0	---	---	None	---	None
		June	3.3-3.7	>6.0	---	---	None	---	None
		July	3.7-6.0	>6.0	---	---	None	---	None
		December	3.7-6.0	>6.0	---	---	None	---	None
290:									
Morical	C								
		Jan-Dec	---	---	---	---	None	---	None
291:									
Morical	C								
		Jan-Dec	---	---	---	---	None	---	None
292:									
Morical	C								
		Jan-Dec	---	---	---	---	None	---	None
293:									
Moscow	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
294:									
Moscow	C								
		Jan-Dec	---	---	---	---	None	---	None
295:									
Moses	C								
		Jan-Dec	---	---	---	---	None	---	None
296:									
Moses	C								
		Jan-Dec	---	---	---	---	None	---	None
297:									
Moses	C								
		Jan-Dec	---	---	---	---	None	---	None
298:									
Moses	C								
		Jan-Dec	---	---	---	---	None	---	None
299:									
Narcisse	B								
		February	3.7-6.0	>6.0	---	---	None	Brief	Occasional
		March	2.9-3.7	>6.0	---	---	None	Brief	Occasional
		April	3.7-6.0	>6.0	---	---	None	Brief	Occasional
300:									
Narcisse	B								
		February	3.7-6.0	>6.0	---	---	None	Brief	Occasional
		March	2.9-3.7	>6.0	---	---	None	Brief	Occasional
		April	3.7-6.0	>6.0	---	---	None	Brief	Occasional
301:									
Nespelem	C								
		Jan-Dec	---	---	---	---	None	---	None
302:									
Nespelem	C								
		Jan-Dec	---	---	---	---	None	---	None
Nespelem	C								
		Jan-Dec	---	---	---	---	None	---	None
303:									
Nespelem	C								
		Jan-Dec	---	---	---	---	None	---	None
Emdent	D								
		January	0.5-1.1	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		June	0.5-1.1	>6.0	---	---	None	---	None
		July	1.1-1.5	>6.0	---	---	None	---	None
		August	1.1-1.5	>6.0	---	---	None	---	None
		September	1.1-1.5	>6.0	---	---	None	---	None
		October	1.1-1.5	>6.0	---	---	None	---	None
		November	1.1-1.5	>6.0	---	---	None	---	None
		December	1.1-1.5	>6.0	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
304:									
Nespelem	C	Jan-Dec	---	---	---	---	None	---	None
Typic Xerorthents	B	Jan-Dec	---	---	---	---	None	---	None
305:									
Neuske	B	Jan-Dec	---	---	---	---	None	---	None
306:									
Neuske	B	Jan-Dec	---	---	---	---	None	---	None
307:									
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
308:									
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
309:									
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
310:									
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
311:									
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
Nevine	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
312:									
Newbell	B	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
313:									
Newbell	B	Jan-Dec	---	---	---	---	None	---	None
314:									
Newbell	B	Jan-Dec	---	---	---	---	None	---	None
315:									
Northstar	C	Jan-Dec	---	---	---	---	None	---	None
316:									
Northstar	C	Jan-Dec	---	---	---	---	None	---	None
317:									
Northstar	C	Jan-Dec	---	---	---	---	None	---	None
Johntom	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
318:									
Northstar	C	Jan-Dec	---	---	---	---	None	---	None
Johntom	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
319:									
Northstar	C	Jan-Dec	---	---	---	---	None	---	None
Louiecreek	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
320:									
Northstar	C	Jan-Dec	---	---	---	---	None	---	None
Louiecreek	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
321:									
Northstar	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
322:									
Ohscow	B								
		Jan-Dec	---	---	---	---	None	---	None
323:									
Ohscow	B								
		Jan-Dec	---	---	---	---	None	---	None
324:									
Ohscow	B								
		Jan-Dec	---	---	---	---	None	---	None
325:									
Ohscow	B								
		Jan-Dec	---	---	---	---	None	---	None
326:									
Okanogan	B								
		January	---	---	---	---	None	Long	Occasional
		February	---	---	---	---	None	Long	Occasional
		March	---	---	---	---	None	Long	Occasional
		April	---	---	---	---	None	Long	Occasional
327:									
Omak	C								
		February	3.2-3.7	1.7-3.3	---	---	None	---	None
		March	1.2-2.2	1.7-3.3	---	---	None	---	None
		April	3.2-3.7	1.7-3.3	---	---	None	---	None
328:									
Owhi	B								
		Jan-Dec	---	---	---	---	None	---	None
329:									
Owhi	B								
		Jan-Dec	---	---	---	---	None	---	None
330:									
Owhi	B								
		Jan-Dec	---	---	---	---	None	---	None
Haley	B								
		Jan-Dec	---	---	---	---	None	---	None
331:									
Oxerine	C								
		Jan-Dec	---	---	---	---	None	---	None
332:									
Oxerine	C								
		Jan-Dec	---	---	---	---	None	---	None
333:									
Oxerine	C								
		Jan-Dec	---	---	---	---	None	---	None
334:									
Oxerine	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
335:									
Oxerine	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
336:									
Parmenter	B								
		Jan-Dec	---	---	---	---	None	---	None
337:									
Parmenter	B								
		Jan-Dec	---	---	---	---	None	---	None
338:									
Parmenter	B								
		Jan-Dec	---	---	---	---	None	---	None
339:									
Parmenter	B								
		Jan-Dec	---	---	---	---	None	---	None
340:									
Peshastin	B								
		Jan-Dec	---	---	---	---	None	---	None
341:									
Peshastin	B								
		Jan-Dec	---	---	---	---	None	---	None
342:									
Peshastin	B								
		Jan-Dec	---	---	---	---	None	---	None
343:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None
344:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None
345:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None
346:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None
347:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None
348:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None
349:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
350:									
Phoebe	B								
		Jan-Dec	---	---	---	---	None	---	None
Dehart	B								
		Jan-Dec	---	---	---	---	None	---	None
351:									
Picard	B								
		Jan-Dec	---	---	---	---	None	---	None
352:									
Picard	B								
		Jan-Dec	---	---	---	---	None	---	None
353:									
Pits	A								
		Jan-Dec	---	---	---	---	None	---	None
354:									
Pogue	B								
		Jan-Dec	---	---	---	---	None	---	None
355:									
Pogue	B								
		Jan-Dec	---	---	---	---	None	---	None
356:									
Pogue	B								
		Jan-Dec	---	---	---	---	None	---	None
357:									
Pogue	B								
		Jan-Dec	---	---	---	---	None	---	None
358:									
Pogue	B								
		Jan-Dec	---	---	---	---	None	---	None
359:									
Pogue	B								
		Jan-Dec	---	---	---	---	None	---	None
360:									
Poween	C								
		February	3.7-6.0	>6.0	---	---	None	---	Rare
		March	3.7-6.0	>6.0	---	---	None	---	Rare
		April	3.7-6.0	>6.0	---	---	None	---	Rare
		May	3.7-6.0	>6.0	---	---	None	---	Rare
361:									
Quincy	A								
		Jan-Dec	---	---	---	---	None	---	None
362:									
Quincy	A								
		Jan-Dec	---	---	---	---	None	---	None
363:									
Quincy	A								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
364:									
Quincy	A	Jan-Dec	---	---	---	---	None	---	None
365:									
Quincy	A	Jan-Dec	---	---	---	---	None	---	None
366:									
Quincy	A	Jan-Dec	---	---	---	---	None	---	None
367:									
Quincy	A	Jan-Dec	---	---	---	---	None	---	None
Aeneas	B	Jan-Dec	---	---	---	---	None	---	None
368:									
Raisio	C	Jan-Dec	---	---	---	---	None	---	None
369:									
Raisio	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
370:									
Raisio	C	Jan-Dec	---	---	---	---	None	---	None
Rufus	D	Jan-Dec	---	---	---	---	None	---	None
371:									
Raisio	C	Jan-Dec	---	---	---	---	None	---	None
Rufus	D	Jan-Dec	---	---	---	---	None	---	None
372:									
Raisio	C	Jan-Dec	---	---	---	---	None	---	None
Rufus	D	Jan-Dec	---	---	---	---	None	---	None
373:									
Raisio	C	Jan-Dec	---	---	---	---	None	---	None
Rufus	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
374:									
Raisio	C								
		Jan-Dec	---	---	---	---	None	---	None
Rufus	D								
		Jan-Dec	---	---	---	---	None	---	None
375:									
Raisio	C								
		Jan-Dec	---	---	---	---	None	---	None
Rufus	D								
		Jan-Dec	---	---	---	---	None	---	None
376:									
Ralsen	D								
		January	2.2-3.5	>6.0	---	---	None	---	None
		February	1.7-2.2	>6.0	---	---	None	---	None
		March	0.9-1.7	>6.0	---	---	None	Brief	Occasional
		April	0.5-0.9	>6.0	---	---	None	Brief	Occasional
		May	0.9-1.7	>6.0	---	---	None	Brief	Occasional
		June	1.7-2.2	>6.0	---	---	None	---	None
		July	2.2-3.5	>6.0	---	---	None	---	None
		August	3.5-6.0	>6.0	---	---	None	---	None
		December	3.5-6.0	>6.0	---	---	None	---	None
377:									
Ratlake	D								
		January	0.2-1.5	0.8-1.7	---	---	None	---	None
		February	0.2-1.5	0.8-1.7	---	---	None	---	None
		March	0.0-0.2	0.8-1.7	0.0-0.5	Brief	Frequent	---	None
		April	0.0-0.2	0.8-1.7	0.0-0.5	Brief	Frequent	---	None
		May	0.0-0.2	0.8-1.7	0.0-0.5	Brief	Frequent	---	None
		June	0.2-1.5	0.8-1.7	---	---	None	---	None
		July	0.2-1.5	0.8-1.7	---	---	None	---	None
378:									
Reardan	C								
		Jan-Dec	---	---	---	---	None	---	None
379:									
Reardan	C								
		Jan-Dec	---	---	---	---	None	---	None
380:									
Rebecca	B								
		Jan-Dec	---	---	---	---	None	---	None
381:									
Rebecca	B								
		Jan-Dec	---	---	---	---	None	---	None
382:									
Renha	C								
		Jan-Dec	---	---	---	---	None	---	None
383:									
Renha	C								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
384:									
Renha	C								
		Jan-Dec	---	---	---	---	None	---	None
Oxerine	C								
		Jan-Dec	---	---	---	---	None	---	None
385:									
Republic	B								
		Jan-Dec	---	---	---	---	None	---	None
386:									
Republic	B								
		Jan-Dec	---	---	---	---	None	---	None
387:									
Republic	B								
		Jan-Dec	---	---	---	---	None	---	None
388:									
Resner	B								
		Jan-Dec	---	---	---	---	None	---	None
389:									
Resner	B								
		Jan-Dec	---	---	---	---	None	---	None
390:									
Ret	D								
		January	2.5-3.0	>6.0	---	---	None	---	None
		February	1.8-2.5	>6.0	---	---	None	Brief	Occasional
		March	1.3-1.8	>6.0	---	---	None	Brief	Occasional
		April	0.7-1.3	>6.0	---	---	None	Brief	Occasional
		May	1.8-2.5	>6.0	---	---	None	Brief	Occasional
		June	2.5-3.0	>6.0	---	---	None	---	None
		July	3.0-6.0	>6.0	---	---	None	---	None
		December	3.0-6.0	>6.0	---	---	None	---	None
391:									
Riverwash	D								
		January	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		February	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		March	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		April	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		May	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		June	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		July	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		August	0.0-2.0	>6.0	---	---	None	---	None
		September	0.0-2.0	>6.0	---	---	None	---	None
		October	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		November	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		December	0.0-2.0	>6.0	---	---	None	Very long	Frequent
392:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
393:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
393:									
Chumstick	D	Jan-Dec	---	---	---	---	None	---	None
394:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Chumstick	D	Jan-Dec	---	---	---	---	None	---	None
395:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Mineral	C	Jan-Dec	---	---	---	---	None	---	None
396:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Rufus	D	Jan-Dec	---	---	---	---	None	---	None
397:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Soaplake	D	Jan-Dec	---	---	---	---	None	---	None
398:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Swakane	D	Jan-Dec	---	---	---	---	None	---	None
399:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Vanbrunt	C	Jan-Dec	---	---	---	---	None	---	None
400:									
Roosevelt	C	Jan-Dec	---	---	---	---	None	---	None
Soaplake	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
401:									
Roosevelt	C	Jan-Dec	---	---	---	---	None	---	None
Soaplake	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
401:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
402:									
Rubble land	A								
		Jan-Dec	---	---	---	---	None	---	None
403:									
Rubble land	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
404:									
Rubble land	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
Haploxerolls	B								
		Jan-Dec	---	---	---	---	None	---	None
405:									
Sacheen	A								
		Jan-Dec	---	---	---	---	None	---	None
406:									
Sacheen	A								
		Jan-Dec	---	---	---	---	None	---	None
407:									
Sacheen	A								
		Jan-Dec	---	---	---	---	None	---	None
408:									
Sanpoil	D								
		January	2.3-2.6	>6.0	---	---	None	---	None
		February	1.0-2.3	>6.0	---	---	None	---	None
		March	0.0-1.0	>6.0	---	---	None	Brief	Occasional
		April	0.0-1.0	>6.0	---	---	None	Brief	Occasional
		May	0.0-1.0	>6.0	---	---	None	Brief	Occasional
		June	1.0-2.3	>6.0	---	---	None	Brief	Occasional
		July	2.3-2.6	>6.0	---	---	None	---	None
		August	2.6-3.4	>6.0	---	---	None	---	None
		September	3.4-6.0	>6.0	---	---	None	---	None
		November	3.4-6.0	>6.0	---	---	None	---	None
		December	2.6-3.4	>6.0	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency		Duration	Frequency
			Ft	*Ft*	*Ft*					
409:										
Sanpoil	D									
		January	1.0-2.3	>6.0	---	---	None		---	None
		February	0.0-1.0	>6.0	0.0-0.5	Long	Frequent		---	None
		March	0.0-1.0	>6.0	0.0-0.5	Long	Frequent		Brief	Occasional
		April	0.0-1.0	>6.0	0.0-0.5	Long	Frequent		Brief	Occasional
		May	0.0-1.0	>6.0	0.0-0.5	Long	Frequent		Brief	Occasional
		June	0.0-1.0	>6.0	0.0-0.5	Long	Frequent		Brief	Occasional
		July	1.0-2.3	>6.0	---	---	None		---	None
		August	2.3-2.6	>6.0	---	---	None		---	None
		September	2.6-3.4	>6.0	---	---	None		---	None
		October	3.4-6.0	>6.0	---	---	None		---	None
		November	2.6-3.4	>6.0	---	---	None		---	None
		December	2.3-2.6	>6.0	---	---	None		---	None
410:										
Scala	B									
		Jan-Dec	---	---	---	---	None		---	None
411:										
Sclome	C									
		February	4.2-6.0	>6.0	---	---	None		---	None
		March	2.3-4.2	>6.0	---	---	None		Brief	Occasional
		April	1.5-2.3	>6.0	---	---	None		Brief	Occasional
		May	2.3-4.2	>6.0	---	---	None		Brief	Occasional
		June	4.2-6.0	>6.0	---	---	None		---	None
412:										
Scoap	B									
		Jan-Dec	---	---	---	---	None		---	None
413:										
Scoap	B									
		Jan-Dec	---	---	---	---	None		---	None
414:										
Scoap	B									
		Jan-Dec	---	---	---	---	None		---	None
415:										
Scoap	B									
		Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D									
		Jan-Dec	---	---	---	---	None		---	None
416:										
Scoap	B									
		Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D									
		Jan-Dec	---	---	---	---	None		---	None
417:										
Scrabblers	B									
		Jan-Dec	---	---	---	---	None		---	None
418:										
Scrabblers	B									
		Jan-Dec	---	---	---	---	None		---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
419:									
Scrabblers	B								
		Jan-Dec	---	---	---	---	None	---	None
420:									
Scrabblers	B								
		Jan-Dec	---	---	---	---	None	---	None
421:									
Sitdown	A								
		Jan-Dec	---	---	---	---	None	---	None
422:									
Skaha	A								
		Jan-Dec	---	---	---	---	None	---	None
423:									
Skaha	A								
		Jan-Dec	---	---	---	---	None	---	None
424:									
Skaha	A								
		Jan-Dec	---	---	---	---	None	---	None
425:									
Skaha	A								
		Jan-Dec	---	---	---	---	None	---	None
426:									
Skaha	A								
		Jan-Dec	---	---	---	---	None	---	None
427:									
Skaha	A								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
428:									
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
429:									
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
430:									
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
431:									
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
432:									
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
433:									
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency		Duration	Frequency
			Ft	*Ft*	*Ft*					
434:										
Skanid	D	Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None		---	None
435:										
Skanid	D	Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None		---	None
436:										
Skanid	D	Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None		---	None
437:										
Spens	A	Jan-Dec	---	---	---	---	None		---	None
438:										
Spens	A	Jan-Dec	---	---	---	---	None		---	None
439:										
Spokane	C	Jan-Dec	---	---	---	---	None		---	None
440:										
Spokane	C	Jan-Dec	---	---	---	---	None		---	None
441:										
Spokane	C	Jan-Dec	---	---	---	---	None		---	None
442:										
Spokane	C	Jan-Dec	---	---	---	---	None		---	None
443:										
Spokane	C	Jan-Dec	---	---	---	---	None		---	None
444:										
Spokane	C	Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None		---	None
445:										
Spokane	C	Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None		---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
446:									
Spokane	C								
		Jan-Dec	---	---	---	---	None	---	None
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
447:									
Spokane	C								
		Jan-Dec	---	---	---	---	None	---	None
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
448:									
Spokane	C								
		Jan-Dec	---	---	---	---	None	---	None
Skanid	D								
		Jan-Dec	---	---	---	---	None	---	None
449:									
Springdale	A								
		Jan-Dec	---	---	---	---	None	---	None
450:									
Springdale	A								
		Jan-Dec	---	---	---	---	None	---	None
451:									
Springdale	A								
		Jan-Dec	---	---	---	---	None	---	None
452:									
Stapaloop	B								
		Jan-Dec	---	---	---	---	None	---	None
453:									
Stapaloop	B								
		Jan-Dec	---	---	---	---	None	---	None
454:									
Stapaloop	B								
		Jan-Dec	---	---	---	---	None	---	None
455:									
Stepstone	B								
		Jan-Dec	---	---	---	---	None	---	None
456:									
Stepstone	B								
		Jan-Dec	---	---	---	---	None	---	None
457:									
Stepstone	B								
		Jan-Dec	---	---	---	---	None	---	None
458:									
Stepstone	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
459:									
Stevens	B	Jan-Dec	---	---	---	---	None	---	None
460:									
Stevens	B	Jan-Dec	---	---	---	---	None	---	None
461:									
Stevens	B	Jan-Dec	---	---	---	---	None	---	None
462:									
Stevens	B	Jan-Dec	---	---	---	---	None	---	None
463:									
Strat	B	Jan-Dec	---	---	---	---	None	---	None
464:									
Stubblefield	C	Jan-Dec	---	---	---	---	None	---	None
465:									
Swakane	D	Jan-Dec	---	---	---	---	None	---	None
466:									
Swakane	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
467:									
Swakane	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
468:									
Swipkin	B	Jan-Dec	---	---	---	---	None	---	None
469:									
Swipkin	B	Jan-Dec	---	---	---	---	None	---	None
470:									
Thout	C	Jan-Dec	---	---	---	---	None	---	None
471:									
Thout	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
472:									
Thout	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
473:									
Thout	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
474:									
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
475:									
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
476:									
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
477:									
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
478:									
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
479:									
Timentwa	B								
		Jan-Dec	---	---	---	---	None	---	None
Bakeoven	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
480:									
Togo	B								
		Jan-Dec	---	---	---	---	None	---	None
481:									
Togo	B								
		Jan-Dec	---	---	---	---	None	---	None
482:									
Togo	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency		Duration	Frequency
			Ft	*Ft*	*Ft*					
483:										
Togo	B									
		Jan-Dec	---	---	---	---	None		---	None
484:										
Togo	B									
		Jan-Dec	---	---	---	---	None		---	None
Rock outcrop	D									
		Jan-Dec	---	---	---	---	None		---	None
485:										
Torboy	A									
		Jan-Dec	---	---	---	---	None		---	None
486:										
Torboy	A									
		Jan-Dec	---	---	---	---	None		---	None
487:										
Torrifluventic Haploxerolls	A									
		February	---	---	---	---	None		Brief	Occasional
		March	---	---	---	---	None		Brief	Occasional
		April	---	---	---	---	None		Brief	Occasional
		May	---	---	---	---	None		Brief	Occasional
488:										
Tunkcreek	A									
		Jan-Dec	---	---	---	---	None		---	None
489:										
Tunkcreek	A									
		Jan-Dec	---	---	---	---	None		---	None
490:										
Tyee	D									
		Jan-Dec	---	---	---	---	None		---	None
491:										
Tyee	D									
		Jan-Dec	---	---	---	---	None		---	None
492:										
Tyee	D									
		Jan-Dec	---	---	---	---	None		---	None
493:										
Tyee	D									
		Jan-Dec	---	---	---	---	None		---	None
Morical	C									
		Jan-Dec	---	---	---	---	None		---	None
Tyee	D									
		Jan-Dec	---	---	---	---	None		---	None
494:										
Tyee	D									
		Jan-Dec	---	---	---	---	None		---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
494:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
495:									
Tyee	D								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
496:									
Typic Haplaquolls	D								
		January	2.0-2.7	>6.0	---	---	None	Long	Occasional
		February	0.7-2.0	>6.0	---	---	None	Long	Occasional
		March	0.7-2.0	>6.0	---	---	None	Long	Occasional
		April	0.7-2.0	>6.0	---	---	None	Long	Occasional
		May	0.7-2.0	>6.0	---	---	None	Long	Occasional
		June	0.7-2.0	>6.0	---	---	None	Long	Occasional
		July	2.0-2.7	>6.0	---	---	None	---	None
		August	2.7-6.0	>6.0	---	---	None	---	None
		December	2.7-6.0	>6.0	---	---	None	---	None
497:									
Typic Xerorthents	B								
		Jan-Dec	---	---	---	---	None	---	None
Typic Xerochrepts	B								
		Jan-Dec	---	---	---	---	None	---	None
498:									
Ultic Haploxerolls	B								
		Jan-Dec	---	---	---	---	None	---	None
499:									
Uncas	D								
		January	0.6-0.9	>6.0	---	---	None	---	None
		February	0.0-0.6	>6.0	---	---	None	---	None
		March	0.0-0.6	>6.0	---	---	None	Long	Frequent
		April	0.6-0.9	>6.0	---	---	None	Long	Frequent
		May	0.9-1.7	>6.0	---	---	None	Long	Frequent
		June	1.7-4.0	>6.0	---	---	None	---	None
		July	4.0-4.3	>6.0	---	---	None	---	None
		August	4.3-6.0	>6.0	---	---	None	---	None
		December	0.9-1.7	>6.0	---	---	None	---	None
500:									
Vanbrunt	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None
501:									
Vanbrunt	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
502:									
Vanbrunt	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
503:									
Wannacott	B	Jan-Dec	---	---	---	---	None	---	None
504:									
Wannacott	B	Jan-Dec	---	---	---	---	None	---	None
505:									
Wapal	A	Jan-Dec	---	---	---	---	None	---	None
506:									
Wapal	A	Jan-Dec	---	---	---	---	None	---	None
507:									
Wapal	A	Jan-Dec	---	---	---	---	None	---	None
508:									
Wapal	A	Jan-Dec	---	---	---	---	None	---	None
509:									
Wellscreek	B	Jan-Dec	---	---	---	---	None	---	None
510:									
Wellscreek	B	Jan-Dec	---	---	---	---	None	---	None
511:									
Wellscreek	B	Jan-Dec	---	---	---	---	None	---	None
512:									
Whitestone	B	Jan-Dec	---	---	---	---	None	---	None
513:									
Whitestone	B	Jan-Dec	---	---	---	---	None	---	None
514:									
Whitestone	B	Jan-Dec	---	---	---	---	None	---	None
515:									
Whitestone	B	Jan-Dec	---	---	---	---	None	---	None
516:									
Whitestone	B	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
516:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
517:									
Wilmont	B	Jan-Dec	---	---	---	---	None	---	None
518:									
Wilmont	B	Jan-Dec	---	---	---	---	None	---	None
519:									
Wilmont	B	Jan-Dec	---	---	---	---	None	---	None
520:									
Wilmont	B	Jan-Dec	---	---	---	---	None	---	None
521:									
Winchester	A	Jan-Dec	---	---	---	---	None	---	None
522:									
Winchester	A	Jan-Dec	---	---	---	---	None	---	None
523:									
Winchester	A	Jan-Dec	---	---	---	---	None	---	None
524:									
Winchester	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
525:									
Winthrop	A	Jan-Dec	---	---	---	---	None	---	None
526:									
Wynhoff	C	Jan-Dec	---	---	---	---	None	---	None
527:									
Wynhoff	C	Jan-Dec	---	---	---	---	None	---	None
528:									
Xeric Torriorthents	B	Jan-Dec	---	---	---	---	None	---	None
529:									
Xeric Torriorthents	B	Jan-Dec	---	---	---	---	None	---	None
530:									
Xerochrepts	B	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Month	Water table			Ponding		Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
530:									
Rubble land	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
531:									
Water	---		---	---	---	---		---	
532:									
Dam	---		---	---	---	---		---	

Table 22.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Achimin	Fine, mixed, mesic Typic Palexerolls
Aeneas	Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Aridic Haploxerolls
Ahtanum	Coarse-silty, mixed (calcareous), mesic Typic Duraquolls
Aits	Coarse-loamy, mixed, frigid Andic Xerochrepts
Anders	Coarse-loamy, mixed, mesic Typic Haploxerolls
Andic Cryaquepts	Andic Cryaquepts
Annum	Fine-loamy, mixed, mesic Ultic Argixerolls
Apex	Coarse-loamy, mixed, frigid Andic Xerochrepts
Aquic Xerofluvents	Aquic Xerofluvents
Badge	Loamy-skeletal, mixed, mesic Typic Argixerolls
Bakeoven	Loamy-skeletal, mixed, mesic Lithic Haploxerolls
Baldknob	Loamy-skeletal, mixed, frigid Lithic Ultic Haploxerolls
Barnellcreek	Ashy over loamy, mixed, frigid Mollic Vitrandepts
Bearspring	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Bernhill	Fine-loamy, mixed, mesic Ultic Haploxeralfs
Beverly	Sandy-skeletal, mixed, mesic Xeric Torrifluvents
Bisbee	Mixed, mesic Typic Xeropsamments
Boesel	Coarse-loamy over sandy or sandy-skeletal, mixed, frigid Cumulic Haploxerolls
Bong	Sandy, mixed, mesic Ultic Haploxerolls
Borgeau	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Borosaprists	Borosaprists
Bossburg	Ashy, nonacid, mesic Mollic Andaquepts
Broadax	Fine-silty, mixed, mesic Calcic Argixerolls
Brusher	Fine-loamy, mixed, frigid Ultic Haploxeralfs
Buhrig	Loamy-skeletal, mixed Andic Cryochrepts
Calcic Pachic Haploxerolls	Calcic Pachic Haploxerolls
Canteen	Coarse-loamy, mixed, frigid Andic Xerochrepts
Capoose	Ashy over loamy-skeletal, mixed, frigid Typic Vitrandepts
Cashmere	Coarse-loamy, mixed, mesic Aridic Haploxerolls
Cashmont	Coarse-loamy, mixed, mesic Aridic Haploxerolls
Cedonia	Fine-silty, mixed, mesic Typic Xerochrepts
Centralpeak	Coarse-loamy, mixed, frigid Andic Xerochrepts
Chumstick	Loamy-skeletal, mixed, frigid Lithic Ultic Haploxerolls
Codylake	Ashy over loamy, mixed Entic Cryandepts
Colockum	Fine-loamy, mixed, mesic Calcic Argixerolls
Conconully	Coarse-loamy, mixed, mesic Ultic Haploxerolls
Couleedam	Loamy-skeletal, mixed, mesic Lithic Haploxerolls
Coxlake	Coarse-loamy, mixed, mesic Cumulic Haploxerolls
Cryofluvents	Cryofluvents
Cubcreek	Coarse-loamy, mixed, frigid Fluvaquentic Haploxerolls
Cumulic Haploxerolls	Cumulic Haploxerolls
Dart	Mixed, mesic Typic Xeropsamments
Dehart	Loamy-skeletal, mixed, mesic Typic Xerochrepts
Dinkelman	Coarse-loamy, mixed, frigid Ultic Haploxerolls
Disautel	Coarse-loamy, mixed, mesic Calcic Haploxerolls
Donavan	Coarse-loamy, mixed, mesic Ultic Haploxerolls
Duleylake	Fine-loamy, mixed, mesic Aquic Argixerolls
Elbowlake	Ashy over loamy-skeletal, mixed, frigid Typic Vitrandepts
Ellisforde	Coarse-silty, mixed, mesic Calciorthidic Haploxerolls
Elvedere	Fine, mixed, mesic Xerollic Paleargids
Emdent	Ashy, calcareous, mesic Mollic Halaquepts
Ewall	Mixed, mesic Typic Xeropsamments
Farrell	Coarse-loamy, mixed, mesic Calciorthidic Haploxerolls
Fivelakes	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Friedlander	Fine, mixed, frigid Ultic Palexeralfs
Garrison	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Georgecreek	Fine-loamy, mixed, mesic Ultic Argixerolls
Ginnis	Coarse-loamy, mixed, mesic Ultic Haploxerolls
Glenrose	Fine-loamy, mixed, mesic Ultic Argixerolls

Table 22.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Goddard	Sandy-skeletal, mixed, frigid Andic Xerochrepts
Goldlake	Coarse-loamy, mixed, mesic Pachic Ultic Haploxerolls
Gooseflats	Sandy, mixed (calcareous), mesic Aeric Halaquepts
Growden	Loamy-skeletal, mixed Andic Cryumbrepts
Hadencreek	Fine-silty, mixed, frigid Calcic Haploxerolls
Haley	Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Ultic Haploxerolls
Hallcreek	Sandy-skeletal, mixed, mesic Andic Xerochrepts
Haploxerolls	Haploxerolls
Hartill	Loamy-skeletal, mixed, frigid Andic Xerochrepts
Hellgate	Coarse-loamy, mixed, mesic Ultic Haploxerolls
Henneway	Fine-loamy, mixed, frigid Ultic Haploxeralfs
Heytou	Loamy-skeletal, mixed, mesic Calciorthidic Haploxerolls
Histosols	Histosols
Hobohill	Sandy, mixed, mesic Ultic Haploxerolls
Hodgson	Fine, mixed, mesic Mollic Palexeralfs
Hudnut	Coarse-loamy, mixed, mesic Typic Xerochrepts
Hunters	Fine-silty, mixed, mesic Calcic Haploxerolls
Inchelium	Coarse-silty, mixed, mesic Pachic Ultic Haploxerolls
Inkler	Loamy-skeletal, mixed, frigid Andic Xerochrepts
Jimcreek	Fine-silty, mixed, frigid Typic Argiaquolls
Johntom	Loamy-skeletal, mixed, mesic Lithic Haploxerolls
Karamin	Sandy, mixed, frigid Typic Xerochrepts
Kartar	Coarse-loamy, mixed, mesic Typic Xerochrepts
Kellerbutte	Ashy over loamy-skeletal, mixed, frigid Typic Vitrandepts
Kenotrail	Fine-loamy, serpentinitic, frigid Mollic Haploxeralfs
Kewach	Fine, mixed, frigid Mollic Palexeralfs
Kiehl	Sandy-skeletal, mixed, frigid Andic Xerochrepts
Koepke	Ashy over loamy, mixed, frigid Mollic Vitrandepts
Lakesol	Coarse-silty, mixed, frigid Ultic Haploxerolls
Leahy	Fine, mixed, mesic Typic Natrargids
Lithic Xerorthents	Lithic Xerorthents
Logy	Loamy-skeletal, mixed, mesic Torrifluventic Haploxerolls
Loony	Ashy over loamy, mixed, frigid Typic Vitrandepts
Lostcreek	Coarse-loamy, mixed, frigid Ultic Haploxerolls
Louiecreek	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Loupoup	Ashy over loamy, mixed, frigid Typic Vitrandepts
Lynxcreek	Fine-silty, mixed Andeptic Cryoboralfs
Malott	Coarse-loamy, mixed, mesic Calciorthidic Haploxerolls
Manley	Ashy over loamy-skeletal, mixed, frigid Entic Cryandepts
Martella	Fine-silty, mixed, frigid Ultic Haploxeralfs
Medisaprists	Medisaprists
Merkel	Loamy-skeletal, mixed, frigid Andic Xerochrepts
Mineral	Loamy-skeletal, mixed, frigid Ultic Haploxerolls
Mitchellpoint	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Ultic Haploxeralfs
Monse	Fine-silty, mixed, mesic Aquic Haploxerolls
Morical	Fine-loamy, mixed, mesic Ultic Argixerolls
Moscow	Coarse-loamy, mixed, frigid Andic Xerochrepts
Moses	Loamy-skeletal, mixed Andic Cryochrepts
Narcisse	Coarse-loamy, mixed, mesic Cumulic Haploxerolls
Nespelem	Coarse-silty, mixed, mesic Entic Durixerolls
Neuske	Fine-loamy, mixed, frigid Mollic Haploxeralfs
Nevine	Ashy over loamy-skeletal, mixed, frigid Typic Vitrandepts
Newbell	Loamy-skeletal, mixed, frigid Andic Xerochrepts
Northstar	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Ohscow	Loamy-skeletal, mixed, frigid Andic Xerochrepts
Okanogan	Coarse-loamy, mixed, mesic Cumulic Haploxerolls
*Olical	Coarse-silty, mixed, mesic Calcic Haploxerolls
Omak	Fine, mixed, mesic Typic Durixerolls
Owhi	Sandy-skeletal, mixed, mesic Ultic Haploxerolls
Oxerine	Loamy-skeletal, mixed, frigid Andic Xerochrepts
Parmenter	Medial over sandy or sandy-skeletal, mixed, frigid Typic Vitrandepts
Peshastin	Loamy-skeletal, mixed, mesic Calciorthidic Haploxerolls
Phoebe	Coarse-loamy, mixed, mesic Pachic Ultic Haploxerolls
Picard	Coarse-loamy, mixed, mesic Ultic Haploxerolls
Pogue	Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Aridic Haploxerolls

Table 22.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Poween	Coarse-loamy, mixed, mesic Cumulic Haploxerolls
Quincy	Mixed, mesic Xeric Torripsamments
*Raisio	Loamy-skeletal, mixed, mesic Entic Ultic Haploxerolls
Ralsen	Coarse-loamy, mixed, mesic Fluvaquentic Haplaquolls
Ratlake	Loamy, mixed (calcareous), mesic, shallow Typic Halaquepts
*Reardan	Fine, mixed, mesic Calcic Argixerolls
Rebecca	Coarse-loamy, mixed, mesic Ultic Haploxerolls
Renha	Fine, mixed, frigid Ultic Haploxeralfs
Republic	Coarse-loamy, mixed, frigid Ultic Haploxerolls
Resner	Medial over sandy or sandy-skeletal, mixed Entic Cryandepts
Ret	Coarse-loamy, mixed, frigid Cumulic Haploxerolls
Roosevelt	Coarse-loamy, mixed, mesic Aridic Haploxerolls
Rufus	Loamy-skeletal, mixed, mesic Lithic Ultic Haploxerolls
Sacheen	Mixed, frigid Typic Xeropsamments
Sanpoil	Coarse-loamy, mixed, frigid Cumulic Haplaquolls
Scala	Coarse-loamy, mixed, mesic Typic Xerochrepts
Sclome	Fine-loamy, mixed, frigid Fluvaquentic Haplaquolls
Scoap	Loamy-skeletal, mixed, frigid Pachic Ultic Haploxerolls
Scrabblers	Sandy, mixed, frigid Andic Xerochrepts
Sitdown	Sandy-skeletal, mixed Andic Cryochrepts
Skaha	Sandy-skeletal, mixed, mesic Xeric Torriorthents
Skanid	Loamy-skeletal, mixed, mesic, shallow Entic Ultic Haploxerolls
Soaplake	Loamy, mixed, mesic Lithic Haploxerolls
Spens	Sandy-skeletal, mixed, mesic Typic Xerorthents
Spokane	Coarse-loamy, mixed, mesic Ultic Haploxerolls
Springdale	Sandy-skeletal, mixed, mesic Typic Xerochrepts
Stapaloop	Coarse-loamy, mixed, frigid Typic Xerochrepts
Stepstone	Medial over sandy or sandy-skeletal, mixed, frigid Typic Vitrandepts
Stevens	Coarse-loamy, mixed, mesic Pachic Ultic Haploxerolls
Strat	Loamy-skeletal, mixed, mesic Aridic Haploxerolls
Stubblefield	Loamy-skeletal, mixed, mesic Orthidic Durixerolls
Swakane	Loamy-skeletal, mixed, mesic Lithic Ultic Haploxerolls
Swipkin	Coarse-silty, mixed, mesic Ultic Haploxerolls
Thout	Loamy-skeletal, mixed, frigid Typic Xerochrepts
Timentwa	Coarse-loamy, mixed, mesic Calcic Pachic Haploxerolls
Togo	Ashy over loamy-skeletal, mixed Entic Cryandepts
Torboy	Sandy, mixed, frigid Typic Xerochrepts
Torrifluventic Haploxerolls	Torrifluventic Haploxerolls
Torriorthents	Torriorthents
Tunkcreek	Coarse-loamy over sandy or sandy-skeletal, mixed Andic Cryochrepts
Tyee	Loamy, mixed, mesic, shallow Ultic Haploxerolls
Typic Haplaquolls	Typic Haplaquolls
Typic Xerochrepts	Typic Xerochrepts
Typic Xerorthents	Typic Xerorthents
Ultic Haploxerolls	Ultic Haploxerolls
Uncas	Ashy, nonacid, frigid Mollic Andaquepts
Vanbrunt	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Wannacott	Fine-silty, mixed, mesic Calcic Argixerolls
Wapal	Sandy-skeletal, mixed, frigid Typic Xerochrepts
Wellscreek	Loamy-skeletal, mixed, frigid Ultic Haploxerolls
Whitestone	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Wilmont	Loamy-skeletal, mixed, frigid Andic Xerochrepts
Winchester	Mixed, mesic Xeric Torripsamments
Winthrop	Sandy-skeletal, mixed, mesic Entic Ultic Haploxerolls
Wynhoff	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Xeric Torriorthents	Xeric Torriorthents
Xerochrepts	Xerochrepts