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In cooperation with United States Department of the Interior; Bureau of Land Management and Bureau of Indian Affairs; and the New Mexico Agricultural Experiment Station

## Soil Survey of Rio Arriba Area, New Mexico, Parts of Rio Arriba and Sandoval 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 planning the use and management of large areas.

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

## Detailed Soil Maps

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

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

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

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


MAP SHEET

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 1987. Soil names and descriptions were approved in 1989. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1987. This survey was made cooperatively by the Natural Resources Conservation Service and the United States Department of the Interior; Bureau of Land Management and Bureau of Indian Affairs; and the New Mexico Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Upper Chama, East Rio Arriba, San Juan, and the Cuba Soil and Water Conservation Districts and the Santa Clara Indian Pueblos.

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: Excellent wildlife habitat is characteristic of the Edward Sergeant Wildlife Management Area north of Chama. Hesperus, Pastorius, and Chamita soils are on the nearly level slopes in the foreground and Nabor and Elbuck soils are on the steeper slopes in the background. The 12,019 foot elevation Chama Peak is in the distance.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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## 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.


Dennis Alexander
State Conservationist
Natural Resources Conservation Service

# Soil Survey of <br> Rio Arriba Area, New Mexico, <br> Parts of Rio Arriba and Sandoval <br> Counties 

By Michael W. Roybal, Natural Resources Conservation Service
Fieldwork by Michael W. Roybal, Gerald Stratton, Javier E. Ruiz, Dale Swanson, Carol Taschek, and Rick Van Remortel,
United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
United States Department of the Interior, Bureau of Land Management, Bureau of Indian Affairs, and New Mexico Agricultural Experiment Station

## General Nature of the Survey Area

Rio Arriba Area is located in north-central New Mexico (Fig. 1). The survey area is bordered on the north by the State of Colorado, on the east by the Carson National Forest and Taos County, on the west by San Juan County, and on the south by Sandoval and Santa Fe Counties. It has a total of 1,581,474 acres or 2,471 square miles. Descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the surrounding soil survey areas in San Juan, Taos, and Santa Fe Counties. This is the result of changing concepts of soil classification and series concepts, different needs, uses, and time of the soil survey work.

Tierra Amarilla, the county seat of Rio Arriba County, is in the north-central part of the survey area. According to the 2000 census, the population of Rio Arriba County was 41,490.


Figure 1.-Location of Rio Arriba Area, New Mexico.

The Rio Chama River traverses the central part of the survey area from north to south, veering east near Abiquiu, eventually joining with the Rio Grande River. The Rio Grande flows north to south through the eastern portion of the survey area. The San Juan River flows south into the county from Colorado along the border with San Juan County and exits west into San Juan County. Drainage is generally to the south and southeast except for small areas in the southeast and southwestern portions of the survey area. Surface runoff east of the Continental Divide flows to the Rio Grande. West of the Continental Divide, drainage flows north and west to the Canyon Largo and San Juan River.

Water for irrigation, municipalities and recreation is supplied by the Rio Grande and Rio Chama Rivers; and, to a small extent, the San Juan River. Water storage developments in the survey area are the Abiquiu, El Vado, and Heron reservoirs (Fig. 2).

Elevations range from about 11,403 feet on Grouse Mesa, the highest point in the survey area, to about 5,600 feet where the Rio Grande enters Santa Fe County at Espanola.

Rio Arriba County is principally agricultural with much of its income derived from livestock enterprises. Most of the land in this county is used for grazing.

There are about 32,000 acres of irrigated cropland in the county. Much of the irrigated land is in the valley areas adjacent to the Rio Chama and Rio Grande near Espanola in the southeastern part of the county and near the community of Tierra Amarilla in the north-central part. In addition there are a number of small and widely separated tracts of irrigated land in the valleys of tributary streams. In general, farms are small, and a large part of the feed crops produced are locally fed and marketed in the form of livestock products. In the southeastern part of the county, and at lower elevations, apples, chile, and alfalfa are the major commercial crops. A short growing season limits the types of crops that can be grown successfully in the northern higher


Figure 2.-Heron Reservoir is one of the major water storage facilities in the survey area.
mountain valleys near Chama and Tierra Amarilla, with irrigated hay and pasture crops dominating.

Land use for forestry, wildlife, and recreation is also of major importance in the county. The high mountainous land, as well as the adjacent foothill areas, provides good habitat for many species of wildlife. These lands offer many opportunities for outdoor recreation including camping, fishing, and hunting. Fishing and recreational facilities are available at El Vado Reservoir and other reservoirs and lakes located in the county. The high mountain perennial streams furnish trout fishing during the summer months.

Since about 1900 the gas and oil industry has helped to support the economy of Rio Arriba County. About ninety-eight percent of the gas produced in the area came from upper Cretaceous rock at a depth of 1,000 to 8,500 feet. Farmington sandstone, the Fruitland Formation, and Pictured Cliff sandstone are the most important gasbearing geologic formations.

## History

The area now known as Rio Arriba County was first colonized by the Spanish in 1598. Juan de Onate received a contract from the Spanish Crown to colonize the northern frontier of New Mexico. On July 11, 1598, Onate reached the Indian village he named San Juan de Los Caballeros. Here is where Onate established the first European settlement of the southwest. The geographic area is now known as the Espanola Valley.

In 1695 the first recorded Spanish land grant was established. Thereafter, all other settlement grants were established in the survey area. In the land grants, cultivable land was divided among the head of households, while the large areas of grazing land were used in common. Acequias were built to irrigate cropland along the valleys. These acequias are still in use today.

The coming of the railroad opened up lumbering, coal mining, and agriculture. The Denver and Rio Grande Western Railroad completed its narrow gauge route from Antonito, Colorado to Espanola, New Mexico and from Antonito to Chama in 1880. From Chama the narrow gauge route continued through the coal mining area of Monero. With the aid of branch lines and connecting spurs, lumbering of the timber resources around the Chama Basin took place. The narrow gauge route from Antonito to Espanola known as the "Chilie Line," continued to operate until 1941. The route from Antonito to Chama operates today as the "Cumbres and Toltec Scenic Railroad."

In 1875 the first oil and gas resources were discovered near Gobernador. This industry still plays a role in the economy of Rio Arriba County.

The population in the survey area increased at a constant rate until the 1940s. Rio Arriba County had a population of 16,624 in 1910. By 1940, Rio Arriba County had a population of 25,352 . This increase in population can be attributed to the railroad. After the railroad ceased running, the population steadily decreased until about 1970. The population increased during the 1970s, and, according to the 2000 census, Rio Arriba County now has a population of 41,190 . This increase in population can be attributed to the development of Los Alamos National Laboratories and the increase in the development of gas and oil resources. Even today, these factors play a role in prosperity of the area.

## Geology and Geomorphology

Steve Lacy, geomorphologist, prepared this section.
The Rio Arriba Area lies in the Southern Rocky Mountains physiographic province within the Rocky Mountain System. This province consists of broad, elevated, northsouth granite core mountain ranges generally flanked by steeply dipping sedimentary rocks. The county consists of structural uplifts and embayments which are
topographically expressed by mountain ranges and valleys. The eastern and central portions of the county are dominated by mountains which exceed 10,000 feet and are associated with the Brazos Uplift, while the western portion of the county lies within the structural units of the San Juan Basin, Archuleta Arch, and the Chama Basin.

The San Juan Basin covers the western portion of the county. The basin is nearly circular in shape and about 100 miles in diameter. The eastern portion of the basin is asymmetrical with a steep northern limb and a gently dipping southern limb. The eastern boundary of the basin is delineated by a monocline fold which adjoins the Archuleta Arch (Kelley, 1957). The basin contains of Tertiary-aged sedimentary rocks consisting of sandstone, siltstone, mudstone, and shale of the San Jose Formation. Scattered beds of volcanic ash can also be found. The geomorphic structures consist of rolling plains, mesas, and canyons.

The Archuleta Arch lies to the east of the San Juan Basin. This structure separates the San Juan Basin from the shallow Chama Basin. It is a north-trending anticlinorium containing numerous faults with generally small amounts of offset. This arched belt of folded and broken rocks formed as a result of the Laramide deformation ( 65 million years before present) with a later Cenozoic accentuation. It forms a connection between the Nacimiento uplift in New Mexico and the San Juan Dome in southwestern Colorado. The southern portion of the arch merges with the Chama Basin through a gently dipping slope to the northeast. The eastern margin of the arch is along the western limb of the Chama syncline (Woodward, 1974). The geomorphic structures consist of broken slopes and escarpments following fault traces imposed on structural trends.

The Chama Basin is both a structural and topographic basin. The basin trends north and ranges from 20 miles wide in the south to a 2 mile width near Chama. The length of the basin is around 60 miles. Within the basin the principal structure is the broad, north- trending Chama syncline. It has exposed sections of Permian through Jurassic sedimentary, marine and non-marine rock strata. The southern end of the basin has exposures of Triassic- and Jurassic-age rocks. The Ghost Ranch is located in this location, an area of mesas and canyons exhibiting the vivid and striking colors found in the rocks of the Mesozoic section. The northern part of the basin contains Cretaceous-age sandstones and marine shales. The geomorphic surfaces consist of sandstone cliffs and shale hills and plains.

The Brazos Uplift trends to the northwest and occupies the eastern portion of the county. The uplift is 25 miles wide and around 50 miles long, and is topographically represented by the Tusas Mountains. It is bounded by the synclinal bend of the Chama basin to the west and the San Luis Basin to the east. The geology consists of horst blocks of Precambrian rocks overlain with a thin veneer of Tertiary volcanic and continental clastic rocks (Muehlberger, 1960). The Tusas contain two belts of Precambrian rocks north from the Ojo Caliente area. The western belt is composed principally of quartzite and forms the cliffs and high mountains of the La Madera, Ortega, and Kiawa Mountains; Quartzite Peak and Jawbone Mountain; and the Brazos, Chavez, and Canones boxes. The eastern belt consists of metasedimentary, metavolcanic, and intrusive igneous rocks of the Ojo Caliente area, La Jarita Mesa, Tusas Mountain, Tres Piedras, and the Precambrian inliers north and south of the Laqunitas Lakes region in the main portion of the Tusas Mountains. Folding of the Precambrian sequence results in a zig-zag boundary between the two belts of rocks (Muehlberger, 1960). Evidence of glaciation during the last ice age is present in this region and extends into the northern Chama Basin. The geomorphic structures consist of mountain slopes and valleys.

## Climate


#### Abstract

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


Climate tables are created from climate stations Alcalde, Chama, Dulce, Lindrith 2 SE, and Tierra Amarilla 4 N , New Mexico.

Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from First Order station Albuquerque, New Mexico.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Alcalde, Chama, Dulce, Lindrith, and Tierra Amarilla in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, average temperatures are 33.0, 23.1, 26.4, 27.7 and 23.7 degrees $F$, respectively, at Alcalde, Chama, Dulce, Lindrith, and Tierra Amarilla. Average daily minimum temperatures in winter are 17.9, 7.3, 9.7, 13.0 and 6.9 degrees, respectively, at these five stations. The lowest temperatures on record were: -34 degrees at Alcalde on January 7, 1971;-30 degrees at Chama on December 23, 1990; -47 degrees at Dulce on December 12, 1961;-25 degrees at Lindrith on January 2, 1979; and -39 degrees at Tierra Amarilla on January 6, 1971.

In summer average temperatures are $70.1,60.0,63.3,65.8$ and 61.2 degrees, respectively, at Alcalde, Chama, Dulce, Lindrith, and Tierra Amarilla. Average daily maximum temperatures in summer are $87.6,78.1,82.8,83.0$ and 79.9 degrees $F$, respectively, at these five stations. The highest temperatures ever recorded were: 102 degrees at Alcalde on July 14, 1971; 103 degrees at Chama on August 12, 1949; 103 degrees at Dulce on June 25, 1954; 100 degrees at Lindrith on July 29, 1995; and 102 degrees at Tierra Amarilla on July 21, 1951.

Growing degree days are shown in Table 3. 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.

Average annual total precipitation across the survey area is quite dependent on elevation and location. In general, the lower elevations in the western half of the county receive only 8 to 10 inches of precipitation annually. Precipitation increases to the east and with elevation, reaching as much as 40 inches in the highest places in the National Forest. Most of the survey area receives between 10 and 20 inches annually. At the five climate stations annual precipitation is 10.35 inches at Alcalde, 22.94 inches at Chama, 17.78 inches at Dulce, 14.28 inches at Lindrith, and 16.47 inches at Tierra Amarilla. Of these amounts, about 40 percent, usually falls in May through September. The growing season for most crops falls within this period at lower elevations. The heaviest 1-day precipitation amounts during the periods of record were: 2.00 inches at Alcalde on August 30, 1989; 2.15 inches at Chama on September 22, 1997; 4.00 inches at Dulce on November 22, 1931; 2.25 inches at Lindrith on October 27, 1998; and 2.00 inches at Tierra Amarilla on November 3, 1952. Thunderstorms occur on about 40 days each year, and most occur between May and September, with an average of around 22 in July and August.

Average seasonal snowfall is highly variable across the survey region. As with precipitation, it increases from west to east, and with elevation. At Alcalde 9.7 inches annually is normal; the normal annual amounts at other stations are 107.1, 55.8, 62.0 and 63.7 inches at Chama, Dulce, Lindrith and Tierra Amarilla, respectively. The greatest snow depths at any one time during the periods of record were: 13 inches at Alcalde, recorded on January 16, 1987; 49 inches at Chama on February 21, 1993; 40 inches at Dulce on January 10, 1974; 22 inches at Lindrith on January 21, 1991; and 44 inches at Tierra Amarilla on November 30, 1983. On average, the lower and
drier locations in the survey area have from 5 to 20 days per year with at least 1 inch of snow on the ground. At higher elevations snow cover is more common, including over 100 days per year at Chama, and about 60 days per year at Dulce and Tierra Amarilla. The heaviest 1-day snowfalls on record were: 12.5 inches at Alcalde recorded on January 16, 1987; 24.0 inches at Chama on February 8, 1994; 36.0 inches at Dulce on November 22, 1931; 14.0 inches at Lindrith on March 11, 1975; and 18.0 inches at Tierra Amarilla on January 25, 1949.

The average relative humidity in mid-afternoon is about 40 percent in the winter and between 15 and 20 percent in the summer. Humidity is higher at night, and the average at dawn is about 70 percent in the winter and 45 percent in the summer. The sun shines about 75 to 80 percent of the time in summer and around 65 to 70 percent in winter. The prevailing wind is from the northwest in the winter and early spring, and from the south and southeast the remainder of the year. Average wind speed is highest, around 12 miles per hour, in 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 and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the fieldobserved characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

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

## General Soil Map Unit Descriptions

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.

## Soil Descriptions

## Soils on alluvial fans, stream terraces, and flood plains

This group makes up about 11 percent of the survey area. The soils in this group are nearly level to strongly sloping. They are sandy to clayey textured and are excessively drained to poorly drained. The risk of flooding ranges from none to occasional periods of flooding. This group is used for urban development, rangeland, and cropland.

## 1. Fruitland-Abiquiu-Jocity

Dry, very deep, somewhat poorly drained and well drained, nearly level to gently sloping, moderately coarse to medium textured soils on alluvial fans and flood plains.

## Setting

Slope: 0 to 5 percent
Elevation: 5,500 to 6,600 feet
Mean annual precipitation: 8 to 10 inches
Mean annual air temperature: 50 to 52 degrees $F$.
Frost-free period: 140 to 160 days

## Composition

Extent within the survey area: 2 percent

## Extent of the soils in the map unit:

Fruitland soils: 28 percent
Abiquiu soils: 27 percent
Jocity soils: 27 percent
Minor soils: 18 percent

## Soil Properties and Qualities

## - Fruitland

Landform: alluvial fans
Depth class: very deep
Drainage class: well drained
Parent material: fan alluvium derived from sandstone
Textural class: moderately coarse

## - Abiquiu

Landform: flood plains
Depth class: very deep
Drainage class: somewhat poorly drained
Parent material: stream alluvium derived from sandstone
Textural class: coarse

- Jocity

Landform: alluvial fans
Depth class: very deep
Drainage class: well drained
Parent material: stream and fan alluvium derived from sedimentary and igneous material
Textural class: medium

- Minor soils

Gilco: medium textured soils on flood plains
Walrees: coarse textured soils on flood plains
Sparham: fine textured soils on flood plains

## Major Uses

Urban development, rangeland, irrigated cropland and pasture

## 2. Chamita-Roques-Carrick

Cool and moist, very deep, poorly drained to well drained, nearly level to moderately sloping, medium to fine textured soils on alluvial fans, stream terraces, and flood plains.

## Setting

Slope: 0 to 8 percent
Elevation: 7,200 to 8,700 feet
Mean annual precipitation: 16 to 25 inches
Mean annual air temperature: 40 to 45 degrees $F$.
Frost-free period: 80 to 100 days

## Composition

Extent within the survey area: 3 percent

## Extent of the soils in the map unit:

Chamita soils: 30 percent
Roques soils: 25 percent
Carrick soils: 25 percent
Minor soils: 20 percent

## Soil Properties and Qualities

## - Chamita

Landform: flood plains
Depth class: very deep
Drainage class: poorly drained
Parent material: stream alluvium derived from sandstone
Textural class: medium

## - Roques

Landform: alluvial fans
Depth class: very deep
Drainage class: well drained
Parent material: fan alluvium derived from shale
Textural class: fine

## - Carrick

Landform: stream terrace
Depth class: very deep
Drainage class: well drained
Parent material: Eolian material and stream alluvium derived from volcanic sources
Textural class: fine

## - Minor soils

Gilco: medium textured soils on flood plains
Riverwash: mostly coarse textured, but variable
Sparham: fine textured soils on flood plains
Walrees: coarse textured soils on flood plains

## Major Uses

Urban development, wildlife habitat, rangeland, irrigated cropland and pasture

## 3. San Mateo-Sparank-Pinavetes

Dry, very deep, moderately well drained to well drained, nearly level to strongly sloping, coarse to fine textured soils on dunes and flood plains.

## Setting

Slope: 0 to 12 percent
Elevation: 5,600 to 7,000 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 48 to 50 degrees $F$.
Frost-free period: 120 to 140 days

## Composition

Extent within the survey area: 6 percent

## Extent of the soils in the map unit:

San Mateo soils: 36 percent
Sparank soils: 30 percent
Pinavetes soils: 22 percent
Minor soils: 12 percent

## Soil Properties and Qualities

## - San Mateo

Landform: flood plains
Depth class: very deep
Drainage class: well drained
Parent material: stream alluvium derived from sandstone and shale Textural class: medium to moderately fine

## - Sparank

Landform: flood plains
Depth class: very deep
Drainage class: well drained
Parent material: stream alluvium derived from shale
Textural class: fine

## - Pinavetes

Landform: dunes
Depth class: very deep
Drainage class: excessively drained
Parent material: Eolian material derived from sandstone
Textural class: coarse

## - Minor soils

Florita: moderately coarse textured soils on hills
Orlie: medium textured soils on fan remnants
Riverwash: mostly coarse textures, but variable

## Major Uses

Wildlife habitat and rangeland

## Arid Soils on Hills and Valleys

This group makes up about 14 percent of the survey area. The soils in this group are nearly level to steep sloping. They are sandy to clayey textured and are excessively drained to well drained. The risk of flooding ranges from none to rare periods of flooding. This group is used for rangeland.

## 4. Silver-Scholle-Losmarios

Dry, very deep, well drained, nearly level to steeply sloping, moderately fine to fine textured soils on stream terraces and alluvial fans.

## Setting

Slope: 1 to 35 percent
Elevation: 6,000 to 6,900 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 48 to 50 degrees $F$.
Frost-free period: 120 to 140 days

## Composition

Extent within the survey area: 4 percent

## Extent of the soils in the map unit:

Silver soils: 30 percent
Scholle soils: 25 percent
Losmarios soils: 25 percent
Minor soils: 20 percent

## Soil Properties and Qualities

## - Silver

Landform: stream terraces
Depth class: very deep
Drainage class: well drained
Parent material: stream alluvium derived from mixed sources
Textural class: fine

- Scholle

Landform: stream terraces
Depth class: very deep
Drainage class: well drained
Parent material: stream alluvium mixed sources
Textural class: moderately fine

## - Losmarios

Landform: alluvial fans
Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium derived from shale
Textural class: fine

- Minor soils

Hagerman: medium textured soils on hills
Penistaja: medium textured soils on stream terraces
Rock outcrop

## Major Uses

Wildlife habitat and rangeland

## 5. Florita-Pinavetes-Palacid

Dry, very deep, well drained to excessively drained, nearly level to steeply sloping, coarse to moderately fine textured soils on hills and dunes.

## Setting

Slope: 0 to 40 percent
Elevation: 5,600 to 7,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 48 to 50 degrees $F$.
Frost-free period: 120 to 140 days

## Composition

Extent within the survey area: 10 percent

## Extent of the soils in the map unit:

Florita soils: 32 percent
Pinavetes soils: 24 percent
Palacid soils: 24 percent
Minor soils: 20 percent

## Soil Properties and Qualities

## - Florita

Landform: hills
Depth class: very deep
Drainage class: well drained
Parent material: eolian material and slope alluvium derived from sandstone
Textural class: moderately coarse

## - Pinavetes

Landform: dunes
Depth class: very deep
Drainage class: excessively drained
Parent material: eolian derived from sandstone
Textural class: coarse

## - Palacid

Landform: hills
Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium and colluvium derived from mixed sources
Textural class: moderately fine

- Minor soils

Fruitland: moderately coarse textured soils on fan remnants
Razito: coarse textured soils on dunes
Penistaja: medium textured soils on fan remnants
Rock outcrop

## Major Uses

Wildlife habitat and rangeland

## Semiarid Soils on Uplands and Valleys

This group makes up about 51 percent of the survey area. The soils in this group are nearly level to steep sloping. They are sandy to clayey textured and are excessively drained to well drained. The risk of flooding ranges from none to rare periods of flooding. This group is used for wood products and rangeland.

## 6. Orlie-Sparham-Nalivag

Moist, very deep, well drained, nearly level to strongly sloping, medium to fine textured soils on fan remnants and flood plains.

## Setting

Slope: 0 to 15 percent
Elevation: 5,500 to 7,500 feet
Mean annual precipitation: 13 to 16 inches

Mean annual air temperature: 45 to 50 degrees $F$.
Frost-free period: 100 to 130 days

## Composition

Extent within the survey area: 4 percent
Extent of the soils in the map unit:
Orlie soils: 35 percent
Sparham soils: 29 percent
Nalivag soils: 20 percent
Minor soils: 16 percent

## Soil Properties and Qualities

- Orlie

Landform: fan remnants
Depth class: very deep
Drainage class: well drained
Parent material: fan alluvium derived from sandstone and shale Textural class: medium and moderately fine

## - Sparham

Landform: flood plains
Depth class: very deep
Drainage class: well drained
Parent material: stream alluvium derived from shale
Textural class: fine

- Nalivag

Landform: fan remnants
Depth class: very deep
Drainage class: well drained
Parent material: fan alluvium derived from sandstone and shale Textural class: medium and moderately fine

## - Minor soils

Vessilla: shallow, moderately coarse textured soils on fan remnants
Royosa: coarse textured soils on dunes
Pinitos: medium textured soils on fan remnants
Riverwash: mostly coarse textures, but variable

## Major Uses

Wildlife habitat and rangeland

## 7. Orlie-Vessilla

Moist, very deep and shallow, well drained, nearly level to steep, medium to moderately coarse textured soils on mesa summits, hills, and fan remnants.

## Setting

Slope: 1 to 45 percent
Elevation: 6,000 to 7,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 45 to 49 degrees $F$.
Frost-free period: 100 to 130 days

## Composition

Extent within the survey area: 5 percent

## Extent of the soils in the map unit:

Orlie soils: 50 percent
Vessilla soils: 30 percent
Minor soils: 20 percent

## Soil Properties and Qualities

- Orlie

Landform: mesa summits and fan remnants
Depth class: very deep
Drainage class: well drained
Parent material: fan and slope alluvium derived from sandstone and shale Textural class: medium and moderately fine

## - Vessilla

Landform: hills and mesas
Depth class: shallow
Drainage class: well drained
Parent material: slope alluvium over residuum derived from sandstone Textural class: moderately coarse

## - Minor soils

San Mateo: medium and moderately fine textured soils on stream terraces Sparank: fine textured soils on stream terraces and flood plains Gobernador: fine textured soils on stream terraces

## Major Uses

Wildlife habitat and rangeland

## 8. Pinitos-Menefee-Badland

Moist, very deep and shallow, well drained, nearly level to steep, medium to moderately fine textured soils and badland on hills.

## Setting

Slope: 2 to 45 percent
Elevation: 6,100 to 7,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 45 to 49 degrees F.
Frost-free period: 100 to 130 days

## Composition

Extent within the survey area: 6 percent

## Extent of the soils in the map unit:

Pinitos soils: 35 percent
Menefee soils: 25 percent
Badland: 21 percent
Minor soils: 19 percent

## Soil Properties and Qualities

## - Pinitos

Landform: hills
Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium derived from sandstone and shale
Textural class: medium and moderately fine

## - Menefee

Landform: hills
Depth class: shallow
Drainage class: well drained
Parent material: colluvium over residuum derived from sandstone and shale Textural class: fine

- Badland

Badland is a miscellaneous area consisting of exposed areas of raw shale that is essentially barren of vegetation. Seams and layers of coal and porcelenite are also included. These areas are highly dissected.

## - Minor soils

Vessilla: shallow, moderately coarse textured soils on fan remnants
Royosa: coarse textured soils on dunes
Lindrith: coarse textured soils on hills
Rock outcrop

## Major Uses

Wood products, wildlife habitat, and rangeland

## 9. Dermala-Tinaja-Chita

Moist, very deep, well drained, nearly level to very steep, medium to moderately fine textured soils on hills, mesas summits and escarpments.

## Setting

Slope: 0 to 75 percent
Elevation: 5,800 to 7,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 45 to 49 degrees F.
Frost-free period: 100 to 130 days

## Composition

Extent within the survey area: 9 percent
Extent of the soils in the map unit:
Dermala soils: 28 percent
Tinaja soils: 27 percent
Chita soils: 25 percent
Minor soils: 20 percent
Soil Properties and Qualities

## - Dermala

Landform: hills
Depth class: very deep

Drainage class: well drained
Parent material: old slope alluvium over colluvium derived from igneous and sedimentary rock
Textural class: moderately fine

## - Tinaja

Landform: escarpments
Depth class: very deep
Drainage class: well drained
Parent material: colluvium derived from sandstone
Textural class: medium

## - Chita

Landform: mesas
Depth class: very deep
Drainage class: well drained
Parent material: Eolian material and slope alluvium derived from sandstone and igneous material
Textural class: moderately fine

## - Minor soils

Rosced: moderately coarse textured soils on hills
Chimayo: shallow, medium textured soils on hills
Yata: moderately coarse textured soils on hills
Rock outcrop

## Major Uses

Wood products, wildlife habitat, and rangeland

## 10. Vessilla-Menefee-Rock outcrop

Moist, shallow, well drained, nearly level to steep, moderately coarse to moderately fine textured soils on hills, breaks, and mesa escarpments.

## Setting

Slope: 0 to 45 percent
Elevation: 6,100 to 7,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 45 to 49 degrees F.
Frost-free period: 100 to 130 days

## Composition

Extent within the survey area: 18 percent
Extent of the soils in the map unit:
Vessilla soils: 39 percent
Menefee soils: 23 percent
Rock outcrop: 16 percent
Minor soils: 22 percent

## Soil Properties and Qualities

## - Vessilla

Landform: hills, breaks, and mesas
Depth class: shallow
Drainage class: well drained

Parent material: slope alluvium over residuum derived from sandstone Textural class: moderately fine

- Menefee

Landform: hills
Depth class: shallow
Drainage class: well drained
Parent material: colluvium over residuum derived from sandstone and shale Textural class: medium

## - Rock outcrop

Rock outcrop consists of barren or nearly barren areas of exposed sandstone and shale on ridges, ledges, and escarpments.

- Minor soils

Florita: moderately coarse textured soils on hills
Chimayo: shallow, medium textured soils on hills
Orlie: medium textured soils on hills

## Major Uses

Wood products and wildlife habitat

## 11. Berryman-Elpedro-Ruson

Moist, very deep, well drained, nearly level to strongly sloping, moderately fine and fine textured soils on alluvial fans, hills, and stream terraces.

## Setting

Slope: 1 to 8 percent
Elevation: 6,500 to 7,600 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 45 to 49 degrees F.
Frost-free period: 100 to 130 days

## Composition

Extent within the survey area: 4 percent
Extent of the soils in the map unit:
Berryman soils: 35 percent
Elpedro soils: 27 percent
Ruson soils: 20 percent
Minor soils: 18 percent

## Soil Properties and Qualities

## - Berryman

Landform: alluvial fans
Depth class: very deep
Drainage class: well drained
Parent material: fan alluvium derived from limestone and shale
Textural class: fine

## - Elpedro

Landform: hills
Depth class: very deep
Drainage class: well drained

Parent material: Old alluvium derived from sandstone and shale Textural class: moderately fine

## - Ruson

Landform: stream terrace
Depth class: very deep
Drainage class: well drained
Parent material: Stream alluvium derived from shale
Textural class: fine

- Minor soils

Orlie: medium textured soils on hills
Menefee: shallow, medium textured soils on hills
Tinaja: medium textured soils on hills
Rock outcrop

## Major Uses

Wildlife habitat and rangeland

## 12. Calendar-Menefee-Amal

Moist, shallow to very deep, well drained, gently sloping to steep, moderately fine and fine textured soils on hills and plateaus

## Setting

Slope: 2 to 45 percent
Elevation: 6,100 to 7,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 45 to 49 degrees F.
Frost-free period: 100 to 130 days

## Composition

Extent within the survey area: 5 percent

## Extent of the soils in the map unit:

Calendar soils: 30 percent
Menefee soils: 30 percent
Amal soils: 20 percent
Minor soils: 20 percent

## Soil Properties and Qualities

## - Calendar

Landform: hills
Depth class: moderately deep
Drainage class: well drained
Parent material: slope alluvium derived from shale
Textural class: fine

## - Menefee

Landform: hills
Depth class: shallow
Drainage class: well drained
Parent material: colluvium over residuum derived from sandstone and shale Textural class: moderately fine and fine

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- Amal <br> Landform: plateaus <br> Depth class: very deep <br> Drainage class: well drained <br> Parent material: Eolian material and slope alluvium derived from shale Textural class: moderately fine
}


## - Minor soils

Berryman: fine textured soils on hills
Peney: shallow, medium textured soils on hills
Stout: shallow, moderately coarse textured soils on hills
Rock outcrop

## Major Uses

Wood products and wildlife habitat

## Cool, Semiarid and Subhumid Soils on Uplands and Valleys

This group makes up about 17 percent of the survey area. The soils in this group are nearly level to very steep. They are loamy to clayey textured and are moderately well drained to well drained. This group is used for wood products and rangeland.

## 13. Capillo-Vamer-Suposo

Cool and moist, shallow and very deep, well drained, nearly level to steep, moderately fine and fine textured soils on stream terraces, hills, and breaks.

## Setting

Slope: 0 to 35 percent
Elevation: 6,900 to 8,500 feet
Mean annual precipitation: 16 to 18 inches
Mean annual air temperature: 40 to 45 degrees F.
Frost-free period: 80 to 100 days

## Composition

Extent within the survey area: 3 percent

## Extent of the soils in the map unit:

Capillo soils: 28 percent
Vamer soils: 27 percent
Suposo soils: 27 percent
Minor soils: 18 percent

## Soil Properties and Qualities

## - Capillo

Landform: stream terrace
Depth class: very deep
Drainage class: well drained
Parent material: fan and stream alluvium derived from shale
Textural class: fine

- Vamer

Landform: breaks and hills
Depth class: shallow
Drainage class: well drained

Parent material: slope alluvium and colluvium derived from sandstone and shale Textural class: fine

## - Suposo

Landform: stream terrace
Depth class: very deep
Drainage class: well drained
Parent material: stream alluvium derived from shale
Textural class: fine

- Minor soils

Carjo: moderately deep, fine textured soils on hills
Brycan: medium textured soils on stream terraces
Chamita: medium textured soils on flood plains
Rock outcrop

## Major Uses

Wood products, wildlife habitat, and rangeland

## 14. Rombo-Hogg-Nusmag

Cool and moist, moderately deep and very deep, moderately well drained and well drained, nearly level to moderately steep, fine textured soils on stream terraces, hills, and cuestas.

## Setting

Slope: 0 to 25 percent
Elevation: 7,400 to 8,200 feet
Mean annual precipitation: 16 to 18 inches
Mean annual air temperature: 40 to 45 degrees F.
Frost-free period: 80 to 100 days

## Composition

Extent within the survey area: 3 percent

## Extent of the soils in the map unit:

Rombo soils: 30 percent
Hogg soils: 25 percent
Nusmag soils: 25 percent
Minor soils: 20 percent

## Soil Properties and Qualities

## - Rombo

Landform: hills
Depth class: moderately deep
Drainage class: well drained
Parent material: slope alluvium and colluvium derived from shale Textural class: fine

## - Hogg

Landform: cuestas and hills
Depth class: very deep
Drainage class: well drained
Parent material: colluvium derived from sandstone and shale Textural class: fine

## - Nusmag

Landform: stream terrace
Depth class: very deep
Drainage class: moderately well drained
Parent material: stream alluvium derived from shale
Textural class: fine

## - Minor soils

Mara: moderately fine textured soils on hills
Wiggler: shallow, medium textured soils on hills
Stout: shallow, moderately coarse textured soils on hills
Rock outcrop

## Major Uses

Wildlife habitat and rangeland

## 15. Nabor-Lobat-Abreu

Cool and moist, very deep, well drained, strongly sloping to very steep, moderately fine and fine textured soils on mountain slopes.

## Setting

Slope: 5 to 60 percent
Elevation: 7,700 to 9,800 feet
Mean annual precipitation: 25 to 28 inches
Mean annual air temperature: 40 to 44 degrees F.
Frost-free period: 70 to 90 days

## Composition

Extent within the survey area: 11 percent
Extent of the soils in the map unit:
Nabor soils: 32 percent
Lobat soils: 26 percent
Abreu soils: 24 percent
Minor soils: 18 percent

## Soil Properties and Qualities

- Nabor

Landform: mountain slopes
Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium derived from shale
Textural class: fine

## - Lobat

Landform: mountain slopes
Depth class: very deep
Drainage class: well drained
Parent material: colluvium derived from igneous material
Textural class: moderately fine

## - Abreu

Landform: mountain slopes
Depth class: deep
Drainage class: well drained
Parent material: colluvium derived from igneous material
Textural class: moderately fine

## - Minor soils

Yata: moderately deep, fine textured soils on mountain slopes
Eody: medium textured soils on mountain slopes
Bracos: medium textured soils on mountain slopes
Rock outcrop

## Major Uses

Wood products and wildlife habitat

## Cold, Subhumid Soils on High Mountains and Valleys

This group makes up about 7 percent of the survey area. The soils in this group are nearly level to very steep. They are fine textured and are poorly drained to well drained. The risk of flooding ranges from none to occasional periods of flooding. This group is used for wood products, wildlife habitat, and rangeland.

## 16. Ess-Croftshaw-Crubas

Cold and moist, very deep, well drained and poorly drained, nearly level to moderately steep, medium to fine textured soils on mountain slopes and stream terraces.

## Setting

Slope: 0 to 20 percent
Elevation: 9,500 to 11,400 feet
Mean annual precipitation: 28 to 35 inches
Mean annual air temperature: 35 to 40 degrees F.
Frost-free period: 50 to 70 days

## Composition

Extent within the survey area: 3 percent

## Extent of the soils in the map unit:

Ess soils: 31 percent
Croftshaw soils: 29 percent
Crubas soils: 22 percent
Minor soils: 18 percent

## Soil Properties and Qualities

## - Ess

Landform: mountain slopes
Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium and colluvium derived from igneous material Textural class: medium

## - Croftshaw

Landform: mountain slopes and stream terraces
Depth class: very deep
Drainage class: well drained
Parent material: colluvium derived from igneous material
Textural class: moderately fine

## - Crubas

Landform: stream terraces and swales
Depth class: very deep
Drainage class: poorly drained
Parent material: stream alluvium derived from igneous material
Textural class: fine

- Minor soils

Bywell: medium textured soils on stream terraces
Gromes: medium textured soils on mountain slopes
Rock outcrop

## Major Uses

Wildlife habitat and rangeland

## 17. Angostura-Saragote

Cold and moist, very deep, somewhat poorly drained to well drained, gently sloping to steep, medium to fine textured soils on mountain slopes.

## Setting

Slope: 2 to 45 percent
Elevation: 9,200 to 11,400 feet
Mean annual precipitation: 28 to 35 inches
Mean annual air temperature: 35 to 40 degrees F.
Frost-free period: 50 to 70 days
Composition
Extent within the survey area: 4 percent
Extent of the soils in the map unit:
Angostura soils: 52 percent
Saragote soils: 30 percent
Minor soils: 18 percent

## Soil Properties and Qualities

## - Angostura

Landform: mountain slopes
Depth class: very deep
Drainage class: well drained
Parent material: slope alluvium and colluvium derived from mixed igneous material Textural class: medium

## - Saragote

Landform: mountain slopes
Depth class: very deep
Drainage class: somewhat poorly drained

Parent material: slope alluvium derived from igneous material Textural class: fine

- Minor soils

Ess: medium textured soils on mountain slopes
Gromes: medium textured soils on mountain slopes
Crubas: fine textured soils on mountain slopes
Rock outcrop
Major Uses
Wood products and wildlife habitat

## Detailed Soil Map Units

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

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

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

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

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

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

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

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

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Walrees-Abiquiu complex, 0 to 2 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. Berryman-Ruson association, 1 to 8 percent slopes is an example.

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

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

## 9—Pinavetes-Florita complex, 2 to 10 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 6,900 feet (1,829 to 2,103 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Pinavetes and similar soils: 50 percent
Florita and similar soils: 40 percent
Minor components: 10 percent
Component Descriptions
Pinavetes soils
Landscape: Uplands
Landform: Dunes
Parent material: Eolian deposits derived from sandstone
Slope: 2 to 10 percent
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to $20 \mathrm{in} / \mathrm{hr}$ (rapid)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Sandy
Potential native vegetation: Indian ricegrass, western wheatgrass, galleta, blue grama, bluestem, oneseed juniper, sand sagebrush, twoneedle pinyon
Land capability subclass (nonirrigated): 6 e

## Typical Profile:

A-0 to 3 inches; loamy sand
C-3 to 60 inches; loamy sand

## Florita soils

Landscape: Uplands
Landform: Hills
Parent material: Eolian deposits over slope alluvium derived from sandstone
Slope: 2 to 6 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 6.9 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 7 (slightly sodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, galleta, Indian ricegrass, needleandthread, big sagebrush, blue grama, muttongrass
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 2 inches; sandy loam
C1-2 to 6 inches; sandy loam
C2-6 to 24 inches; coarse sandy loam
C3 and C4-24 to 60 inches; sandy loam

## Minor Components

San Mateo and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Salty Bottomland
Sparank and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Salty Bottomland

# 10-Sparank-San Mateo silt loams, saline, sodic, 0 to 3 percent slopes 

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 6,900 feet ( 1,829 to 2,103 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees $F$. ( 8.9 to 10.0 degrees $C$.)
Frost-free period: 120 to 140 days
Map Unit Composition
Sparank and similar soils: 55 percent
San Mateo and similar soils: 30 percent
Minor components: 15 percent
Component Descriptions

## Sparank soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: . 001 to .06 in/hr (very slow)
Available water capacity: About 6.5 inches (moderate)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: Rare
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 6 mmhos $/ \mathrm{cm}$ (slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 22 (moderately sodic)
Ecological site: Salty Bottomland
Potential native vegetation: alkali sacaton, western wheatgrass, bottlebrush squirreltail, galleta, fourwing saltbush, greasewood
Land capability subclass (nonirrigated): 7s
Typical Profile:
A-0 to 2 inches; silt loam
$2 \mathrm{Cn}-2$ to 60 inches; clay

## San Mateo soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.0 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)

Flooding hazard: Rare
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $6 \mathrm{mmhos} / \mathrm{cm}$ (slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 22 (moderately sodic)
Ecological site: Salty Bottomland
Potential native vegetation: alkali sacaton, western wheatgrass, bottlebrush squirreltail, galleta, fourwing saltbush, greasewood
Land capability subclass (nonirrigated): 6e
Typical Profile:
A—0 to 2 inches; silt loam
C-2 to 60 inches; stratified sandy loam to clay loam

## Minor Components

Florita and similar soils
Composition: About 10 percent Slope: 2 to 6 percent Drainage class: Well drained Ecological site: Loamy

Pinavetes and similar soils
Composition: About 5 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Sandy Slopes

## 11-Fruitland sandy loam, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,000 feet ( 1,676 to 1,829 meters)
Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Fruitland and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Fruitland soils

Landscape: Uplands
Landform: Alluvial fans, stream terraces
Parent material: Stream alluvium derived from sandstone and/or fan alluvium derived from sandstone
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)

Available water capacity: About 7.1 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Sandy
Potential native vegetation: blue grama, western wheatgrass, Indian ricegrass, bottlebrush squirreltail, dropseed, needleandthread
Land capability subclass (irrigated): 2e
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 2 inches; sandy loam
C-2 to 60 inches; sandy loam

## Minor Components

Jocity and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy

Pinavetes and similar soils
Composition: About 5 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Sandy Slopes
Werlog and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Rare
Ecological site: Salty Bottomland

## 12—Pinavetes loamy sand, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,600 to 6,000 feet (1,707 to 1,829 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Pinavetes and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Pinavetes soils

Landscape: Uplands
Landform: Dunes
Parent material: Eolian deposits derived from sandstone
Slope: 0 to 3 percent
Depth class:Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to $20 \mathrm{in} / \mathrm{hr}$ (rapid)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Deep Sand
Potential native vegetation: Indian ricegrass, blue grama, sand sagebrush
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 4 inches; loamy sand
C-4 to 60 inches; loamy sand

## Minor Components

Fruitland and similar soils
Composition: About 10 percent
Slope: 1 to 5 percent
Drainage class:Well drained
Ecological site: Sandy
Gilco and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Loamy

## 18-Abiquiu-Peralta complex, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,100 feet ( 1,676 to 1,859 meters)
Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F . ( 10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days

## Map Unit Composition

Abiquiu and similar soils: 50 percent
Peralta and similar soils: 40 percent
Minor components: 10 percent

## Component Descriptions

## Abiquiu soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from sandstone
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Somewhat poorly drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 2.2 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Seasonal high water table depth: About 24 to 48 inches
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Potential native vegetation:
Common trees: Rio Grande cottonwood
Other plants: willow, stretchberry, western wheatgrass, Brickellia, Woods rose, alkali sacaton, bottlebrush squirreltail, fourwing saltbush, inland saltgrass, mule's fat, sedge
Land capability subclass (nonirrigated): 7s
Typical Profile:
A-0 to 4 inches; silt loam
C1-4 to 8 inches; fine sandy loam
C2 to C4-8 to 60 inches; stratified extremely cobbly extremely gravelly coarse sand to extremely gravelly sand

## Peralta soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from sandstone
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Somewhat poorly drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.8 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Seasonal high water table depth: About 24 to 36 inches
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 6 (slightly sodic)
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Potential native vegetation:
Common trees: Rio Grande cottonwood
Other plants: giant sacaton, alkali sacaton, willow, fourwing saltbush
Land capability subclass (nonirrigated): 7c
Typical Profile:
A-0 to 18 inches; loamy fine sand
C-18 to 65 inches; stratified loamy sand to clay loam

## Minor Components

Sparham and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Salt Meadow
Walrees and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 14 to 60 inches to strongly contrasting textural stratification
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex

## 20—Menefee-Vessilla-Rock outcrop complex, 5 to 35 percent slopes

## Map Unit Setting

## Major Land Resource Area: 36

Elevation: 6,900 to 7,600 feet (2,103 to 2,316 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Menefee and similar soils: 35 percent
Vessilla and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Component Descriptions

## Menefee soils

Landscape: Uplands
Landform: Hills
Parent material: Colluvium derived from shale over residuum

Slope: 5 to 35 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 1.9 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Very high
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Gambel oak, big sagebrush, sideoats grama
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 3 inches; loam
C-3 to 10 inches; clay loam
Cr-10 to 60 inches; bedrock

## Vessilla soils

Landscape: Uplands
Landform: Summit mesas, hills
Parent material: Residuum weathered from sandstone and/or slope alluvium derived from sandstone
Slope: 5 to 35 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: mountain big sagebrush, oak, oneseed juniper, twoneedle pinyon, Indian ricegrass, Rocky Mountain juniper
Land capability subclass (nonirrigated): 7s

Typical Profile:
A-0 to 2 inches; sandy loam
C-2 to 10 inches; sandy loam
R-10 to 60 inches; bedrock
Rock outcrop
Depth to restrictive feature: 0 inches to bedrock, lithic

## Minor Components

Lindrith and similar soils
Composition: About 10 percent
Slope: 2 to 7 percent
Drainage class: Well drained
Ecological site: Loamy
Nalivag and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Loamy
Orlie and similar soils
Composition: About 5 percent
Slope: 1 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

## 21-Werlog clay loam, 0 to 1 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,000 feet ( 1,676 to 1,829 meters)
Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F . ( 10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Werlog and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions
Werlog soils
Landscape:Valleys
Landform: Flood plains
Parent material: Alluvium derived from igneous rock
Slope: 0 to 1 percent
Depth class:Very deep
Drainage class: Somewhat poorly drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.6 inches (high)
Shrink-swell potential: About 4.3 percent (moderate)
Flooding hazard: Rare
Seasonal high water table depth: About 24 to 42 inches

Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 2 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $3 \mathrm{mmhos} / \mathrm{cm}$ (very slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Salty Bottomland
Potential native vegetation: alkali sacaton, fourwing saltbush, galleta, greasewood, shadscale saltbush, big sagebrush, inland saltgrass, western wheatgrass
Land capability subclass (irrigated): 3w
Land capability subclass (nonirrigated): 6w
Typical Profile:
A-0 to 6 inches; clay loam
C1 to C4-6 to 55 inches; stratified fine sandy loam to clay loam
C5-55 to 60 inches; stratified sand to cobbly sand

## Minor Components

Werlog and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Rare
Ecological site: Salty Bottomland
Abiquiu and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Peralta and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex

## 22—Jocity-Gilco complex, 1 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,100 feet ( 1,676 to 1,859 meters)
Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Jocity and similar soils: 50 percent
Gilco and similar soils: 35 percent
Minor components: 15 percent


Figure 3.-Typical landscape of Jocity-Gilco complex, 1 to 3 percent slopes. This unit can be used for irrigated pasture.

## Component Descriptions

## Jocity soils

Landscape:Valleys
Landform: Alluvial fans
Parent material: Fan alluvium derived from igneous and sedimentary rock
Slope: 1 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 8.0 inches (moderate)
Shrink-swell potential: About 2.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: About 2 percent
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 2 (slightly sodic)
Ecological site: Loamy
Potential native vegetation: blue grama, galleta, big sagebrush, western wheatgrass, bottlebrush squirreltail
Land capability subclass (irrigated): 2e
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 11 inches; sandy loam
C1-11 to 22 inches; fine sandy loam
C2-22 to 41 inches; clay loam
C3-41 to 60 inches; sandy loam

## Gilco soils

Landscape:Valleys
Landform: Alluvial fans
Parent material: Fan alluvium derived from igneous and sedimentary rock
Slope: 1 to 3 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 8.2 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1
(slightly sodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, fourwing
saltbush, galleta, sand dropseed
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 7c

## Typical Profile:

A-0 to 12 inches; loamy sand
C1-12 to 50 inches; stratified loamy sand to sandy loam
C2-50 to 60 inches; stratified loamy sand to loam

## Minor Components

Alcalde and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Clayey
Walrees and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 14 to 60 inches to strongly contrasting textural stratification
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Werlog and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained

Flooding hazard: Rare
Ecological site: Salty Bottomland

## 23-Gilco sandy clay loam, 0 to 3 percent slopes

Map Unit Setting
Major Land Resource Area: 36
Elevation: 5,500 to 6,100 feet ( 1,676 to 1,859 meters)
Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F . ( 10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Gilco and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Gilco soils

Landscape:Valleys
Landform: Alluvial fans
Parent material: Fan alluvium derived from igneous and sedimentary rock
Slope: 0 to 3 percent
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1
(slightly sodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, fourwing saltbush, galleta, sand dropseed
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 7c

## Typical Profile:

Ap-0 to 14 inches; sandy clay loam
C-14 to 60 inches; stratified loamy sand to sandy loam

## Minor Components

Alcalde and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Clayey

Jocity and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy
Walrees and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 14 to 60 inches to strongly contrasting textural stratification
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex

## 24-Jocity sandy clay loam, 0 to 1 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,100 feet ( 1,676 to 1,859 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Jocity and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## Jocity soils

Landscape:Valleys
Landform: Alluvial fans
Parent material: Fan alluvium derived from igneous and sedimentary rock
Slope: 0 to 1 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 8.4 inches (moderate)
Shrink-swell potential: About 2.9 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: About 2 percent
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 2 (slightly sodic)
Ecological site: Loamy
Potential native vegetation: blue grama, galleta, big sagebrush, western wheatgrass, bottlebrush squirreltail
Land capability subclass (irrigated): 1
Land capability subclass (nonirrigated): 7c

## Typical Profile:

Ap-0 to 14 inches; sandy clay loam
C1-14 to 33 inches; fine sandy loam
C2-33 to 60 inches; clay loam
Minor Components
Fruitland and similar soils
Composition: About 5 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Sandy
Gilco and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Loamy
Walrees and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 14 to 60 inches to strongly contrasting textural stratification
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex

## 30-San Mateo sandy loam, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 6,900 feet ( 1,829 to 2,103 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees $F$. ( 8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
San Mateo and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## San Mateo soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 8.8 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: Rare
Runoff class: Low

Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: About 1 percent
Salinity average in horizon of maximum accumulation: About $6 \mathrm{mmhos} / \mathrm{cm}$ (slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 22 (moderately sodic)
Ecological site: Salty Bottomland
Potential native vegetation: alkali sacaton, western wheatgrass, bottlebrush
squirreltail, galleta, fourwing saltbush, greasewood
Land capability subclass (nonirrigated): 6e

## Typical Profile:

A-0 to 3 inches; sandy loam
C-3 to 60 inches; stratified sandy loam to clay loam

## Minor Components

Gobernador and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Salty Bottomland
Orlie and similar soils
Composition: About 5 percent
Slope: 1 to 8 percent
Drainage class: Well drained
Ecological site: Loamy
Vessilla and similar soils
Composition: About 5 percent
Slope: 1 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

## 31-Gobernador-Orlie association, 0 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 7,400 feet (1,829 to 2,256 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Gobernador and similar soils: 50 percent
Orlie and similar soils: 40 percent
Minor components: 10 percent


Figure 4.-Typical landscape of Gobernador-Orlie association, 0 to 8 percent slopes.

## Component Descriptions

## Gobernador soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from sandstone and shale
Slope: 0 to 2 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 4.8 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $12 \mathrm{mmhos} / \mathrm{cm}$ (moderately saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 29
(moderately sodic)
Ecological site: Salty Bottomland
Potential native vegetation: alkali sacaton, western wheatgrass, bottlebrush squirreltail, galleta, fourwing saltbush, greasewood
Land capability subclass (nonirrigated): 7s

## Typical Profile:

A-0 to 2 inches; silty clay loam
C-2 to 60 inches; clay

## Orlie soils

Landscape: Uplands
Landform: Fan remnants
Parent material: Fan alluvium derived from sandstone and shale
Slope: 2 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 3 inches; loam
Bt-3 to 35 inches; clay loam
Btk and Bk-35 to 60 inches; clay loam

## Minor Components

Lindrith and similar soils
Composition: About 5 percent
Slope: 2 to 7 percent
Drainage class: Well drained
Ecological site: Loamy
San Mateo and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Salty Bottomland

## 34—Alcalde clay, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,100 feet (1,676 to 1,859 meters)
Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Alcalde and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

```
Alcalde soils
Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 0 to 3 percent
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: . }001\mathrm{ to . 06 in/hr (very slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: Rare
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About }12\textrm{mmhos}/\textrm{cm
    (moderately saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 9
    (slightly sodic)
Ecological site: Clayey
Potential native vegetation: galleta, western wheatgrass, alkali sacaton, blue grama,
    fourwing saltbush, Indian ricegrass, big sagebrush, bottlebrush squirreltail
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6s
Typical Profile:
    A-0 to 3 inches; clay
    Bk—3 to 60 inches; clay
Minor Components
Gilco and similar soils
    Composition: About }5\mathrm{ percent
    Slope: }0\mathrm{ to 3 percent
    Drainage class: Well drained
    Ecological site: Loamy
Jocity and similar soils
    Composition: About 5 percent
    Slope: 0 to 1 percent
    Drainage class:Well drained
    Ecological site: Loamy
Werlog and similar soils
    Composition: About 5 percent
    Slope: 0 to 1 percent
    Drainage class: Somewhat poorly drained
    Flooding hazard: Rare
    Ecological site: Salty Bottomland
```


## 39—Fruitland sandy loam, 3 to 5 percent slopes

Map Unit Setting<br>Major Land Resource Area: 36<br>Elevation: 5,500 to 6,600 feet ( 1,676 to 2,012 meters)<br>Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)<br>Mean annual air temperature: 50 to 52 degrees F . ( 10.0 to 11.1 degrees C.)<br>Frost-free period: 140 to 160 days

## Map Unit Composition

Fruitland and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Fruitland soils

Landscape:Valleys
Landform: Alluvial fans, stream terraces
Parent material: Fan alluvium and/or stream alluvium derived from sandstone
Slope: 3 to 5 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 6.5 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Sandy
Potential native vegetation: blue grama, western wheatgrass, bottlebrush squirreltail, dropseed, needleandthread
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 7 inches; sandy loam
C1—7 to 41 inches; sandy loam
C2-41 to 60 inches; gravelly sandy loam

## Minor Components

Pinavetes and similar soils
Composition: About 10 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Sandy Slopes
Jocity and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy

# 40—Pinitos-Menefee-Vessilla complex, 2 to 20 percent slopes 

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,700 to 7,800 feet (2,042 to 2,377 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Pinitos and similar soils: 40 percent
Menefee and similar soils: 20 percent
Vessilla and similar soils: 20 percent
Minor components: 20 percent
Component Descriptions

## Pinitos soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from sandstone and shale
Slope: 2 to 10 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 9.2 inches (high)
Shrink-swell potential: About 2.8 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, New Mexico Feathergrass, blue grama, bottlebrush squirreltail, muttongrass, pinyon ricegrass
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 4 inches; fine sandy loam
Bt1 and Bt2—4 to 28 inches; sandy clay loam
C1 and C2—28 to 60 inches; sandy clay loam

## Menefee soils

Landscape: Uplands
Landform: Hills
Parent material: Colluvium over residuum weathered from sandstone and shale
Slope: 5 to 20 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: . 06 to 0.2 in/hr (slow)

Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Gambel oak, big sagebrush, sideoats grama
Land capability subclass (nonirrigated): 7s

## Typical Profile:

A-0 to 2 inches; clay loam
C-2 to 10 inches; clay loam
$\mathrm{Cr}-10$ to 60 inches; bedrock

## Vessilla soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over residuum weathered from sandstone
Slope: 5 to 20 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 1.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Indian ricegrass, mountain big sagebrush, oak, sideoats grama
Land capability subclass (nonirrigated): 7s
Typical Profile:
A-0 to 2 inches; fine sandy loam
C-2 to 10 inches; fine sandy loam
R—10 to 60 inches; bedrock

## Minor Components

Royosa and similar soils
Composition: About 10 percent
Slope: 2 to 7 percent
Drainage class: Somewhat excessively drained
Ecological site: Sandy
Lindrith and similar soils
Composition: About 5 percent
Slope: 2 to 7 percent
Drainage class: Well drained
Ecological site: Loamy
Nalivag and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

## 42-Walrees-Abiquiu complex, 0 to 2 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,000 feet (1,676 to 1,829 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Walrees and similar soils: 45 percent
Abiquiu and similar soils: 40 percent
Minor components: 15 percent

## Component Descriptions

Walrees soils<br>Landscape:Valleys<br>Landform: Swales<br>Parent material: Stream alluvium derived from sandstone and shale<br>Slope: 0 to 2 percent<br>Depth class: Very deep<br>Depth to restrictive feature: 14 to 60 inches to strongly contrasting textural stratification<br>Drainage class: Somewhat poorly drained<br>Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)<br>Available water capacity: About 5.6 inches (low)<br>Shrink-swell potential: About 1.5 percent (low)<br>Flooding hazard: Occasional<br>Seasonal high water table depth: About 24 to 60 inches<br>Runoff class: Low<br>Calcium carbonate average in horizon of maximum accumulation: About 5 percent Gypsum average in horizon of maximum accumulation: None



Figure 5.-Typical landscape of Walrees-Abiquiu complex, 0 to 2 percent slopes on flood plains of the Chama River.

## Salinity average in horizon of maximum accumulation: About 5 mmhos/cm (slightly saline)

Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Potential native vegetation:
Common trees: Rio Grande cottonwood
Other plants: western wheatgrass, alkali sacaton, obtuse panicgrass, fourwing saltbush, rubber rabbitbrush
Land capability subclass (nonirrigated): 6w
Typical Profile:
A-0 to 4 inches; clay loam
C1-4 to 23 inches; silty clay loam
2C-23 to 60 inches; stratified gravelly sand to cobbly sand

## Abiquiu soils

Landscape: Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from sandstone
Slope: 0 to 2 percent
Depth class: Very deep
Drainage class: Somewhat poorly drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 2.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)

Flooding hazard: Occasional
Seasonal high water table depth: About 24 to 48 inches
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Potential native vegetation:
Common trees: Rio Grande cottonwood
Other plants: willow, stretchberry, western wheatgrass, Anderson wolfberry,
Brickellia, Woods rose, alkali sacaton, bottlebrush squirreltail, fourwing
saltbush, inland saltgrass, mule's fat, sedge
Land capability subclass (nonirrigated): 7s

## Typical Profile:

A-0 to 3 inches; fine sandy loam
C1-3 to 17 inches; loamy sand
C2-17 to 60 inches; stratified extremely cobbly coarse sand to extremely gravelly sand

## Minor Components

Jocity and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy
Peralta and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Walrees and similar soils
Composition: About 3 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Werlog and similar soils
Composition: About 2 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Rare
Ecological site: Salty Bottomland

# 50-Stout-Kunz sandy loams, 5 to 15 percent slopes 

Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,300 to 7,900 feet (2,225 to 2,408 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. ( 4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Stout and similar soils: 45 percent
Kunz and similar soils: 40 percent
Minor components: 15 percent
Component Descriptions

## Stout soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over residuum weathered from sandstone
Slope: 5 to 15 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class:Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 2.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi
Potential native vegetation:
Common trees: ponderosa pine
Other plants: Arizona fescue, mountain muhly, muttongrass, prairie Junegrass, sedge
Land capability subclass (nonirrigated): 7s

## Typical Profile:

O-0 to 2 inches; slightly decomposed plant material
A-2 to 5 inches; sandy loam
C-5 to 14 inches; sandy loam
R-14 to 60 inches; bedrock

## Kunz soils

Landscape: Uplands

## Landform: Hills

Parent material: Slope alluvium derived from sandstone and shale
Slope: 5 to 15 percent
Depth class:Very deep
Drainage class: Well drained

Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Grassland
Potential native vegetation:
Common trees: ponderosa pine, Rocky Mountain juniper , twoneedle pinyon
Other plants: Arizona fescue, Gambel oak, Indian ricegrass, mountain muhly, bottlebrush squirreltail, little bluestem, muttongrass, prairie junegrass
Land capability subclass (nonirrigated): 6e
Typical Profile:
A-0 to 3 inches; sandy loam
Bt and $\mathrm{C}-3$ to 60 inches; sandy clay loam

## Minor Components

Menefee and similar soils
Composition: About 10 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

## Badland

Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, paralithic

## 54-Capillo silt loam, 0 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,500 to 8,500 feet (2,286 to 2,591 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Map Unit Composition
Capillo and similar soils: 90 percent
Minor components: 10 percent

## Component Descriptions

## Capillo soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 0 to 8 percent

```
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: . }06\mathrm{ to 0.2 in/hr (slow)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 6.7 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None
    (nonsodic)
Ecological site: Mountain Valley
Potential native vegetation: Gambel oak, common snowberry, muttongrass, mountain
    muhly, sedge
Land capability subclass (irrigated): 2c
Land capability subclass (nonirrigated): 4c
Typical Profile:
    A-0 to 4 inches; silt loam
    BA-4 to 11 inches; silt loam
    Bt1-11 to 16 inches; clay
    Bt2,Bt3,C-16 to 60 inches; clay
```


## Minor Components

```
Nusmag and similar soils
Composition: About 9 percent
Slope: 0 to 3 percent
Drainage class: Moderately well drained
Ecological site: Mountain Meadow
Tottles and similar soils
Composition: About 1 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Mountain Meadow
```


## 60-Sparham clay loam, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,000 feet (1,676 to 1,829 meters)
Mean annual precipitation: 13 to 16 inches (330 to 406 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Sparham and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Sparham soils

Landscape:Valleys
Landform: Flood plains

Parent material: Stream alluvium derived from shale
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 001 to .06 in/hr (very slow)
Available water capacity: About 9.0 inches (high)
Shrink-swell potential: About 6.9 percent (high)
Flooding hazard: Rare
Seasonal high water table depth: About 48 to 60 inches
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $6 \mathrm{mmhos} / \mathrm{cm}$ (slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 9 (slightly sodic)
Ecological site: Clayey Bottomland
Potential native vegetation: western wheatgrass, alkali sacaton, blue grama, fourwing saltbush, galleta
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6e
Typical Profile:
A-0 to 4 inches; clay loam
C1-4 to 41 inches; clay
C2-41 to 54 inches; sandy clay
C3-54 to 60 inches; sandy loam

## Minor Components

Alcalde and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Clayey
Walrees and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 14 to 60 inches to strongly contrasting textural stratification
Drainage class: Somewhat poorly drained
Flooding hazard: Occasional
Ecological site: Populus fremontii/Salix exigua-Salix/Carex
Werlog and similar soils
Composition: About 5 percent
Slope: 0 to 1 percent
Drainage class: Somewhat poorly drained
Flooding hazard: Rare
Ecological site: Salty Bottomland

## 61-Colomex gravelly silt loam, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,500 to 8,200 feet (2,286 to 2,499 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Colomex and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Colomex soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous rock
Slope: 0 to 3 percent
Surface fragments: About 24 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 4.6 inches (low)


Figure 6.-Typical landscape of Colomex gravelly silt loam, 0 to 3 percent slopes, on a stream terrace along the Chama River.

Shrink-swell potential: About 2.7 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi
Potential native vegetation:
Common trees: ponderosa pine
Other plants: Arizona fescue, mountain muhly, muttongrass, prairie Junegrass, sedge
Land capability subclass (irrigated): 4c
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 6 inches; gravelly silt loam
2Bt1-6 to 12 inches; gravelly sandy clay loam
2Bt2-12 to 34 inches; extremely cobbly sandy clay loam
3Bt3-34 to 60 inches; very gravelly loamy sand

## Minor Components

Doslomas and similar soils
Composition: About 10 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Mountain Loam
Dula and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow

## 64-Dula loam, 0 to 2 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,000 to 8,000 feet (2,134 to 2,438 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Dula and similar soils: 90 percent
Minor components: 10 percent

## Component Descriptions

## Dula soils

Landscape:Valleys
Landform: Flood plains

Parent material: Stream alluvium derived from sandstone and shale Slope: 0 to 2 percent
Depth class: Very deep
Drainage class: Poorly drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: About 12 to 20 inches
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Meadow
Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (irrigated): 4w
Land capability subclass (nonirrigated): 6w
Typical Profile:
A—0 to 11 inches; loam
Bg-11 to 28 inches; loam
2C-28 to 60 inches; extremely gravelly coarse sand

## Minor Components

Colomex and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi

Doslomas and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Mountain Loam

## 65-Doslomas loam, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,000 to 8,000 feet (2,134 to 2,438 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Map Unit Composition
Doslomas and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Doslomas soils

Landscape: Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 2.6 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Loam
Potential native vegetation: Arizona fescue, bluegrass, western wheatgrass, needlegrass, bottlebrush squirreltail, muhly, spike muhly
Land capability subclass (irrigated): 3c
Land capability subclass (nonirrigated): 4c
Typical Profile:
A-0 to 7 inches; loam
Bt—7 to 28 inches; clay loam
2C-28 to 60 inches; extremely cobbly coarse sand

## Minor Components

Colomex and similar soils
Composition: About 10 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi
Encicado and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Occasional
Ecological site: Mountain Valley

## 66-Encicado silty clay loam, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,000 to 8,000 feet (2,134 to 2,438 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Encicado and similar soils: 90 percent
Minor components: 10 percent

## Component Descriptions

## Encicado soils

Landscape:Valleys
Landform: Swales
Parent material: Stream alluvium derived from shale
Slope: 0 to 3 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 8.4 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: Occasional
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Valley
Potential native vegetation: spike muhly, Arizona fescue, mountain muhly, western wheatgrass, prairie junegrass
Land capability subclass (irrigated): 3c
Land capability subclass (nonirrigated): 4c

## Typical Profile:

A-0 to 17 inches; silty clay loam
Bt1-17 to 35 inches; silty clay loam
2Bt2- 35 to 60 inches; extremely cobbly clay loam

## Minor Components

Doslomas and similar soils
Composition: About 9 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Mountain Loam
Tottles and similar soils
Composition: About 1 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Mountain Meadow

## 69—Lindrith-Royosa complex, 2 to 7 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,600 to 7,300 feet (2,012 to 2,225 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)

Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.) Frost-free period: 100 to 130 days

Map Unit Composition
Lindrith and similar soils: 50 percent
Royosa and similar soils: 35 percent
Minor components: 15 percent

## Component Descriptions

## Lindrith soils

Landscape: Uplands
Landform: Alluvial fans
Parent material: Fan alluvium derived from sandstone and shale
Slope: 2 to 7 percent
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 6.9 inches (moderate)
Shrink-swell potential: About 1.9 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 13 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 2 (slightly sodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian ricegrass, fourwing saltbush, needleandthread
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 11 inches; silty clay loam
C-11 to 67 inches; stratified loamy sand to sandy loam

## Royosa soils

Landscape: Uplands
Landform: Dunes
Parent material: Eolian deposits derived from sandstone
Slope: 2 to 7 percent
Depth class: Very deep
Drainage class: Somewhat excessively drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 2 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Sandy

Potential native vegetation: Indian ricegrass, western wheatgrass, galleta, blue grama, oneseed juniper, rubber rabbitbrush, sandhill muhly, twoneedle pinyon Land capability subclass (nonirrigated): 6s

Typical Profile:
A-0 to 2 inches; sandy loam
C-2 to 60 inches; loamy sand
Minor Components
Pinitos and similar soils
Composition: About 5 percent
Slope: 2 to 10 percent
Drainage class: Well drained
Ecological site: Loamy
Sparham and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Flooding hazard: Rare
Ecological site: Salt Meadow
Vessilla and similar soils
Composition: About 5 percent
Slope: 1 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

## 70-Sparham clay loam, saline, sodic, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,200 feet (2,073 to 2,195 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Sparham and similar soils: 80 percent
Minor components: 20 percent
Component Descriptions

## Sparham soils

Landscape: Valleys
Landform: Stream terraces, flood plains
Parent material: Stream alluvium derived from shale
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Well drained

Slowest permeability: . 001 to $.06 \mathrm{in} / \mathrm{hr}$ (very slow)
Available water capacity: About 5.3 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: Rare
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $12 \mathrm{mmhos} / \mathrm{cm}$ (moderately saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 22 (moderately sodic)
Ecological site: Salt Meadow
Potential native vegetation: inland saltgrass, sand dropseed, alkali sacaton, fourwing saltbush, greasewood
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6s
Typical Profile:
A-0 to 2 inches; clay loam
C1 and C2-2 to 35 inches; clay loam
C3-35 to 60 inches; clay

## Minor Components

Royosa and similar soils
Composition: About 10 percent
Slope: 2 to 7 percent
Drainage class: Somewhat excessively drained
Ecological site: Sandy
Lindrith and similar soils
Composition: About 5 percent
Slope: 2 to 7 percent
Drainage class: Well drained
Ecological site: Loamy
Nalivag and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

## 80—Orlie-Nalivag loams, 2 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,900 to 7,400 feet (2,103 to 2,256 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days

## Map Unit Composition

Orlie and similar soils: 45 percent
Nalivag and similar soils: 35 percent
Minor components: 20 percent

## Component Descriptions

## Orlie soils

Landscape: Uplands
Landform: Fan remnants
Parent material: Fan alluvium derived from sandstone and shale
Slope: 2 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 2 mmhos $/ \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 3 inches; loam
Bt- 3 to 35 inches; clay loam
Btk and Bk- 35 to 60 inches; clay loam

## Nalivag soils

Landscape: Uplands
Landform: Fan remnants
Parent material: Fan alluvium derived from sandstone and shale
Slope: 2 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6c

```
Typical Profile:
    A-0 to 3 inches; loam
    C-3 to 60 inches; loam
Minor Components
Menefee and similar soils
    Composition: About }10\mathrm{ percent
    Slope: }8\mathrm{ to }25\mathrm{ percent
    Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
    Drainage class:Well drained
    Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambeli/Bouteloua
        gracilis
Sparham and similar soils
    Composition: About }10\mathrm{ percent
    Slope: 0 to 3 percent
    Drainage class:Well drained
    Flooding hazard: Rare
    Ecological site: Salt Meadow
```


## 102—Menefee-Nalivag complex, 8 to 25 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,900 to 7,400 feet (2,103 to 2,256 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Menefee and similar soils: 40 percent
Nalivag and similar soils: 40 percent
Minor components: 20 percent

## Component Descriptions

## Menefee soils

Landscape: Uplands
Landform: Hills
Parent material: Colluvium over residuum weathered from shale
Slope: 8 to 25 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 2.8 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)

Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Gambel oak, big sagebrush, sideoats grama Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 2 inches; clay loam
C-2 to 14 inches; clay loam
R—14 to 60 inches; bedrock

## Nalivag soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from sandstone and shale
Slope: 8 to 15 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.1 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 4 inches; loam
C—4 to 60 inches; loam

## Minor Components

Vessilla and similar soils
Composition: About 10 percent
Slope: 1 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

Orlie and similar soils
Composition: About 5 percent
Slope: 1 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

Pinitos and similar soils
Composition: About 5 percent
Slope: 2 to 10 percent
Drainage class: Well drained
Ecological site: Loamy

## 103-Orlie fine sandy loam, 1 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,500 feet (1,890 to 2,286 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Orlie and similar soils: 80 percent
Minor components: 20 percent

## Component Descriptions

## Orlie soils

Landscape: Uplands
Landform: Mesas, fan remnants
Parent material: Fan alluvium and/or slope alluvium derived from sandstone and shale


Figure 7.-Typical landscape of Orlie fine sandy loam, 1 to 8 percent slopes.

Slope: 1 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian
ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 3 inches; fine sandy loam
Bt-3 to 13 inches; clay loam
Btk and Bk-13 to 60 inches; sandy clay loam

## Minor Components

Lindrith and similar soils
Composition: About 10 percent
Slope: 2 to 7 percent
Drainage class: Well drained
Ecological site: Loamy
Rosced and similar soils
Composition: About 5 percent
Slope: 20 to 50 percent
Drainage class: Well drained
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
Royosa and similar soils
Composition: About 5 percent
Slope: 2 to 7 percent
Drainage class: Somewhat excessively drained
Ecological site: Sandy

## 106-Amal silt loam, 2 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,400 to 7,600 feet (2,256 to 2,316 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days

## Map Unit Composition

Amal and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Amal soils

Landscape: Uplands
Landform: Plateaus
Parent material: Eolian deposits over slope alluvium derived from shale
Slope: 2 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.8 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 5 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: Gambel oak, muttongrass, bottlebrush squirreltail, mountain big sagebrush, prairie junegrass, Columbia needlegrass, bluegrass, pinyon ricegrass, western wheatgrass
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 4 inches; silt loam
Bt-4 to 43 inches; clay loam
2Bk-43 to 60 inches; silty clay loam

## Minor Components

Menefee and similar soils
Composition: About 8 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

Vessilla and similar soils
Composition: About 7 percent
Slope: 1 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/
Bouteloua gracilis

## 107-Berryman-Ruson association, 1 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,400 to 7,600 feet (2,256 to 2,316 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days

## Map Unit Composition

Berryman and similar soils: 55 percent
Ruson and similar soils: 30 percent
Minor components: 15 percent


Figure 8.-Typical landscape of Berryman-Ruson association, 1 to 8 percent slopes.

## Component Descriptions

## Berryman soils

Landscape:Valleys
Landform: Alluvial fans
Parent material: Fan alluvium derived from limestone and sandstone
Slope: 3 to 8 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 11.3 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)

Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 48 percent
Gypsum average in horizon of maximum accumulation: About 1 percent
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Clayey
Potential native vegetation: western wheatgrass, alkali sacaton, big sagebrush, blue grama, bottlebrush squirreltail, muttongrass, prairie junegrass, spike muhly, winterfat
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 3 inches; silt loam
Bw and Bk-3 to 80 inches; silty clay loam

## Ruson soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 1 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 9.1 inches (high)
Shrink-swell potential: About 6.7 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Swale
Potential native vegetation: western wheatgrass, alkali sacaton, big sagebrush, blue grama, bottlebrush squirreltail, mountain big sagebrush
Land capability subclass (nonirrigated): 6c
Typical Profile:
A—0 to 2 inches; silt loam
C1-2 to 19 inches; silty clay loam
C2—19 to 65 inches; clay

## Minor Components

Calendar and similar soils
Composition: About 14 percent
Slope: 5 to 35 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/ Bouteloua gracilis

Chamita and similar soils
Composition: About 1 percent
Slope: 0 to 3 percent
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow

## 108-Peney-Ransect association, 1 to 20 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 7,800 feet (2,164 to 2,377 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Peney and similar soils: 50 percent
Ransect and similar soils: 35 percent
Minor components: 15 percent

## Component Descriptions

## Peney soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from limestone
Slope: 3 to 20 percent
Surface fragments: About 27 percent channers
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 1.4 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 20 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: Rocky Mountain juniper, twoneedle pinyon
Other plants: Rocky Mountain juniper, twoneedle pinyon, Gambel oak, prairie junegrass, Columbia needlegrass, Indian ricegrass, mountain mahogany, pinyon ricegrass
Land capability subclass (nonirrigated): 6e

## Typical Profile:

A-0 to 3 inches; channery loam
Bk-3 to 10 inches; silt loam
R-10 to 60 inches; bedrock

## Ransect soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from limestone
Slope: 1 to 6 percent
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 7.6 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 50 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1
(slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: Rocky Mountain juniper, twoneedle pinyon
Other plants: Gambel oak, prairie junegrass, Indian ricegrass, bottlebrush squirreltail, mountain mahogany, pinyon ricegrass
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 3 inches; silty clay loam
Bk-3 to 38 inches; clay loam
R-38 to 60 inches; bedrock

## Minor Components

Rock outcrop
Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, lithic
Berryman and similar soils
Composition: About 5 percent
Slope: 3 to 8 percent
Drainage class:Well drained
Ecological site: Clayey
Ruson and similar soils
Composition: About 5 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Swale

## 109-Calendar gravelly loam, 5 to 35 percent slopes

Major Land Resource Area: 36
Elevation: 7,200 to 7,700 feet (2,195 to 2,347 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days

## Map Unit Composition

Calendar and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Calendar soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from shale
Slope: 5 to 35 percent
Surface fragments: About 30 percent (shape or size unspecified)
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: .06 to 0.2 in/hr (slow)
Available water capacity: About 4.9 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 13 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: Rocky Mountain juniper, twoneedle pinyon
Other plants: twoneedle pinyon, Gambel oak, Rocky Mountain juniper, prairie junegrass, Columbia needlegrass, bottlebrush squirreltail, mountain big sagebrush, muttongrass
Land capability subclass (nonirrigated): 6e
Typical Profile:
A-0 to 2 inches; gravelly loam
2Bw-2 to 17 inches; clay
2Bk-17 to 35 inches; clay
$3 \mathrm{Cr}-35$ to 60 inches; bedrock

## Minor Components

Berryman and similar soils
Composition: About 10 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Clayey


Figure 9.-Typical landscape of Calendar gravelly loam, 5 to 35 percent slopes.


Figure 10.-Typical landscape of Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes.

Menefee and similar soils
Composition: About 5 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/ Bouteloua gracilis

## 110-Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,100 to 7,200 feet (1,859 to 2,195 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Vessilla and similar soils: 45 percent
Menefee and similar soils: 25 percent
Orlie and similar soils: 20 percent
Minor components: 10 percent

## Component Descriptions

## Vessilla soils

Landscape: Uplands
Landform: Breaks
Parent material: Slope alluvium over residuum weathered from sandstone
Slope: 1 to 30 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Indian ricegrass, mountain big sagebrush, oak, sideoats grama
Land capability subclass (nonirrigated): 7s

Typical Profile:
A-0 to 1 inches; sandy loam
C-1 to 15 inches; sandy loam
R-15 to 60 inches; bedrock
Menefee soils
Landscape: Uplands
Landform: Breaks
Parent material: Colluvium over residuum weathered from shale
Slope: 2 to 30 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Gambel oak, big sagebrush, sideoats grama
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 3 inches; clay loam
C-3 to 10 inches; clay loam
$\mathrm{Cr}-10$ to 60 inches; bedrock

## Orlie soils

Landscape: Uplands
Landform: Summits mesas
Parent material: Slope alluvium derived from sandstone and shale
Slope: 1 to 8 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 10.9 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy

Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian
ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 4 inches; silt loam
Bt-4 to 14 inches; clay loam
Btk and Bk—14 to 60 inches; clay loam

## Minor Components

Rock outcrop
Composition: About 4 percent
Depth to restrictive feature: 0 inches to bedrock, lithic
Gobernador and similar soils
Composition: About 3 percent
Slope: 0 to 2 percent
Drainage class: Well drained
Ecological site: Salty Bottomland
Pinavetes and similar soils
Composition: About 3 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Sandy Slopes

## 113-Teromote-Ruson association, 1 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 7,400 feet (2,164 to 2,256 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Teromote and similar soils: 55 percent
Ruson and similar soils: 25 percent
Minor components: 20 percent
Component Descriptions

## Teromote soils

Landscape: Uplands
Landform: Alluvial fans
Parent material: Fan alluvium derived from shale
Slope: 2 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.7 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 13 percent

Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian
ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6c

Typical Profile:
A-0 to 2 inches; loam
Bw-2 to 12 inches; loam
Bk-12 to 65 inches; loam

## Ruson soils

Landscape: Uplands
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 1 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 2 (slightly sodic)
Ecological site: Swale
Potential native vegetation: western wheatgrass, alkali sacaton, big sagebrush, blue grama, bottlebrush squirreltail, mountain big sagebrush
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A1-0 to 3 inches; clay loam
C2-3 to 65 inches; clay

## Minor Components

Berryman and similar soils
Composition: About 10 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Clayey
Rock outcrop
Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Calendar and similar soils
Composition: About 5 percent
Slope: 5 to 35 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

## 115-Menefee channery loam, 2 to 35 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,000 to 7,500 feet (2,134 to 2,286 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Menefee and similar soils: 80 percent
Minor components: 20 percent
Component Descriptions

## Menefee soils

Landscape: Uplands
Landform: Hills
Parent material: Colluvium over residuum weathered from shale
Slope: 2 to 35 percent
Surface fragments: About 15 percent channers
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: . 06 to 0.2 in/hr (slow)
Available water capacity: About 2.2 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 13 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Gambel oak, big sagebrush, sideoats grama
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 2 inches; channery loam
C-2 to 11 inches; clay loam
Cr-11 to 60 inches; bedrock

## Minor Components <br> Berryman and similar soils <br> Composition: About 8 percent <br> Slope: 3 to 8 percent <br> Drainage class: Well drained <br> Ecological site: Clayey

Calendar and similar soils
Composition: About 7 percent
Slope: 5 to 35 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

Elpedro and similar soils
Composition: About 5 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

## 117-Chamita loam, 0 to 2 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,800 to 8,500 feet ( 2,377 to 2,591 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Map Unit Composition
Chamita and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Chamita soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from igneous and sedimentary rock
Slope: 0 to 2 percent
Depth class:Very deep
Drainage class: Poorly drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.1 percent (moderate)
Flooding hazard: Frequent
Seasonal high water table depth: 0 to 36 inches
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Meadow
Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (irrigated): 4w
Land capability subclass (nonirrigated): 4w

Typical Profile:
A1-0 to 7 inches; loam
A2,A3-7 to 36 inches; loam
Cg1,Cg2—36 to 55 inches; loam
Cg3-55 to 60 inches; gravelly sandy loam
Minor Components
Hesperus and similar soils
Composition: About 10 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Mountain Loam
Pastorius and similar soils
Composition: About 5 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Mountain Loam

## 118-Hesperus-Pastorius-Chamita complex, 0 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 8,000 to 8,700 feet (2,438 to 2,652 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Hesperus and similar soils: 35 percent
Pastorius and similar soils: 25 percent
Chamita and similar soils: 20 percent
Minor components: 20 percent

## Component Descriptions

## Hesperus soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous and sedimentary rock Slope: 1 to 5 percent


Figure 11.-Typical landscape of Hesperus-Pastorius-Chamita complex, 0 to 5 percent slopes.

Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$
(nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, sideoats grama, Arizona fescue, blue grama, western wheatgrass
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 3e
Typical Profile:
A-0 to 4 inches; loam
$B A, B t, C-4$ to 60 inches; loam

## Pastorius soils

Landscape: Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous and sedimentary rock Slope: 1 to 5 percent

Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 6.6 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Loam
Potential native vegetation: Arizona fescue, bluegrass, western wheatgrass, needlegrass, bottlebrush squirreltail, mountain muhly, spike muhly
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 4c

## Typical Profile:

A and BA-0 to 12 inches; silt loam
Bt1-12 to 20 inches; cobbly loam
Bt2 and Bt3-20 to 60 inches; very cobbly loam

## Chamita soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from igneous and sedimentary rock
Slope: 0 to 2 percent
Depth class: Very deep
Drainage class: Poorly drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.3 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: Frequent
Seasonal high water table depth: 0 to 36 inches
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Meadow
Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (irrigated): 4w
Land capability subclass (nonirrigated): 4w
Typical Profile:
A1-0 to 10 inches; clay loam
A2-10 to 36 inches; loam
Cg-36 to 60 inches; clay loam

## Minor Components

Abreu and similar soils
Composition: About 10 percent
Slope: 15 to 60 percent
Depth to restrictive feature: 40 to 60 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambeliiSymphoricarpos albus/Festuca arizonica-Carex geyeri

Nabor and similar soils
Composition: About 10 percent
Slope: 5 to 35 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica

## 119—Roques-Nusmag clay loams, 1 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,400 to 8,000 feet (2,256 to 2,438 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Roques and similar soils: 45 percent
Nusmag and similar soils: 35 percent
Minor components: 20 percent
Component Descriptions

## Roques soils

Landscape:Valleys
Landform: Alluvial fans
Parent material: Fan alluvium derived from shale
Slope: 2 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 001 to $.06 \mathrm{in} / \mathrm{hr}$ (very slow)
Available water capacity: About 9.0 inches (moderate)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Loam
Potential native vegetation: western wheatgrass, Rocky Mountain iris, prairie junegrass, spike muhly, sedge, shrubby cinquefoil
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 4c

## Typical Profile:

A-0 to 2 inches; clay loam
Bw and $\mathrm{Bk}-2$ to 60 inches; clay

## Nusmag soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 1 to 3 percent
Depth class: Very deep
Drainage class: Moderately well drained
Slowest permeability: . 001 to .06 in/hr (very slow)
Available water capacity: About 9.0 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Seasonal high water table depth: About 42 to 72 inches
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 6 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Meadow
Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 4c

## Typical Profile:

A-0 to 3 inches; clay loam
Bw and C-3 to 60 inches; clay

## Minor Components

Rombo and similar soils
Composition: About 12 percent
Slope: 5 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Mountain Shale
Wiggler and similar soils
Composition: About 7 percent
Slope: 5 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Mountain Shale
Tottles and similar soils
Composition: About 1 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Ecological site: Mountain Meadow

## 125-Hogg-Mara Ioams, 2 to 12 percent slopes

Map Unit Setting<br>Major Land Resource Area: 48A<br>Elevation: 7,400 to 8,200 feet (2,256 to 2,499 meters)<br>Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)<br>Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)<br>Frost-free period: 80 to 100 days<br>Map Unit Composition

Hogg and similar soils: 55 percent
Mara and similar soils: 30 percent
Minor components: 15 percent
Component Descriptions

## Hogg soils

Landscape: Uplands
Landform: Hills
Parent material: Colluvium derived from shale
Slope: 2 to 9 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 9.5 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Valley
Potential native vegetation: Arizona fescue, needlegrass, prairie Junegrass, western wheatgrass, pine dropseed
Land capability subclass (nonirrigated): 6 e
Typical Profile:
A-0 to 3 inches; loam
Bt and Btk-3 to 60 inches; clay loam

## Mara soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from sandstone and shale
Slope: 2 to 12 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.8 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 10 percent Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Valley
Potential native vegetation: Arizona fescue, needlegrass, prairie Junegrass, western wheatgrass, Thurber fescue, pine dropseed, ponderosa pine
Land capability subclass (nonirrigated): 6e
Typical Profile:
A-0 to 2 inches; loam
Bw-2 to 18 inches; clay loam
Bk-18 to 60 inches; clay loam

## Minor Components

Nusmag and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Moderately well drained
Ecological site: Mountain Meadow
Rombo and similar soils
Composition: About 5 percent
Slope: 5 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Mountain Shale

Wiggler and similar soils
Composition: About 5 percent
Slope: 5 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Mountain Shale

## 127-Rombo-Wiggler complex, 5 to 25 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,400 to 8,100 feet (2,256 to 2,469 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Map Unit Composition
Rombo and similar soils: 45 percent
Wiggler and similar soils: 40 percent
Minor components: 15 percent
Component Descriptions

## Rombo soils

Landscape: Uplands
Landform: Hills

Parent material: Slope alluvium over colluvium derived from shale
Slope: 5 to 25 percent
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 7 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 2 (slightly sodic)
Ecological site: Mountain Shale
Potential native vegetation: western wheatgrass, Gambel oak, mountain muhly, Arizona fescue, Indian ricegrass, big sagebrush
Land capability subclass (nonirrigated): 6e

## Typical Profile:

A-0 to 4 inches; clay
Bw-4 to 21 inches; clay
Bk-21 to 37 inches; clay
2Cr-37 to 60 inches; bedrock

## Wiggler soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over colluvium derived from shale
Slope: 5 to 25 percent
Surface fragments: About 25 percent channers
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 5 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Mountain Shale
Potential native vegetation: true mountain mahogany, sedge, Indian ricegrass
Land capability subclass (nonirrigated): 7s
Typical Profile:
A-0 to 3 inches; channery clay loam
C-3 to 10 inches; clay loam
Cr-10 to 60 inches; bedrock

## Minor Components

Carrick and similar soils
Composition: About 5 percent
Slope: 1 to 4 percent
Drainage class: Well drained
Ecological site: Mountain Loam
Hogg and similar soils
Composition: About 5 percent
Slope: 2 to 9 percent
Drainage class: Well drained
Ecological site: Mountain Valley
Roques and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class:Well drained
Ecological site: Mountain Loam

## 129—Nusmag-Tottles clay loams, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,400 to 8,000 feet (2,256 to 2,438 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Map Unit Composition
Nusmag and similar soils: 45 percent
Tottles and similar soils: 35 percent
Minor components: 20 percent

## Component Descriptions

## Nusmag soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 0 to 3 percent
Depth class: Very deep
Drainage class: Moderately well drained
Slowest permeability: . 001 to $.06 \mathrm{in} / \mathrm{hr}$ (very slow)
Available water capacity: About 9.0 inches (moderate)
Shrink-swell potential: About 7.5 percent (high)
Seasonal high water table depth: About 42 to 72 inches
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 6 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)


Figure 12.-Typical landscape of Nusmag-Tottles clay loams, 0 to 3 percent slopes in the foreground and Yata-Eody loams, 50 to $\mathbf{8 0}$ percent slopes in the background.

## Ecological site: Mountain Meadow

Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 4c

## Typical Profile:

A-0 to 2 inches; clay loam Bw and C-2 to 60 inches; clay

## Tottles soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 0 to 2 percent
Depth class:Very deep
Drainage class: Poorly drained
Slowest permeability: .06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 9.2 inches (high)
Shrink-swell potential: About 6.6 percent (high)
Seasonal high water table depth: About 6 to 36 inches
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Mountain Meadow
Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (irrigated): 3w
Land capability subclass (nonirrigated): 4w

Typical Profile:
A1-0 to 6 inches; clay loam
A2-6 to 21 inches; clay
A3 and $\mathrm{Cg}-21$ to 60 inches; clay

## Minor Components

Chamita and similar soils
Composition: About 8 percent
Slope: 0 to 3 percent
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow

Hogg and similar soils
Composition: About 7 percent
Slope: 2 to 9 percent
Drainage class: Well drained
Ecological site: Mountain Valley

Mara and similar soils
Composition: About 5 percent
Slope: 2 to 12 percent
Drainage class: Well drained
Ecological site: Mountain Valley

## 130-Topetaul-Hogg complex, 3 to 25 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,500 to 8,200 feet (2,286 to 2,499 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Map Unit Composition
Topetaul and similar soils: 45 percent
Hogg and similar soils: 35 percent
Minor components: 20 percent

## Component Descriptions

## Topetaul soils

Landscape: Uplands
Landform: Dipslope of cuestas

Parent material: Slope alluvium over colluvium derived from shale
Slope: 3 to 25 percent
Surface fragments: About 5 percent gravel, about 18 percent cobbles
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 6.5 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi
Potential native vegetation:
Common trees: ponderosa pine
Other plants: Arizona fescue, mountain muhly, muttongrass, prairie Junegrass, sedge
Land capability subclass (nonirrigated): 4c
Typical Profile:
A-0 to 6 inches; cobbly silt loam
BA-6 to 13 inches; very cobbly silt loam
$2 \mathrm{Bt} 1-13$ to 28 inches; very gravelly clay
2Bt2, 2Bt3-28 to 60 inches; extremely cobbly clay

## Hogg soils

Landscape: Uplands
Landform: Dipslope of cuestas
Parent material: Colluvium derived from sandstone and shale
Slope: 3 to 25 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 9.5 inches (high)
Shrink-swell potential: About 7.2 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Valley
Potential native vegetation: Arizona fescue, mountain muhly, needlegrass, prairie Junegrass, big sagebrush, bottlebrush squirreltail, pine dropseed, western wheatgrass
Land capability subclass (nonirrigated): 6e

## Typical Profile:

A-0 to 7 inches; loam
Bt1-7 to 25 inches; clay loam
Bt2-25 to 60 inches; gravelly clay

## Minor Components

Carrick and similar soils
Composition: About 8 percent
Slope: 1 to 4 percent
Drainage class: Well drained
Ecological site: Mountain Loam
Hesperus and similar soils
Composition: About 7 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Mountain Loam

Roques and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Mountain Loam

## 132-Stout-Rock outcrop-Carjo complex, 5 to 20 percent slopes

Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,200 to 8,300 feet (2,195 to 2,530 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Map Unit Composition
Stout and similar soils: 40 percent
Rock outcrop: 20 percent
Carjo and similar soils: 20 percent
Minor components: 20 percent

## Component Descriptions

## Stout soils

Landscape: Uplands
Landform: Hills, ridges
Parent material: Slope alluvium over residuum weathered from sandstone Slope: 5 to 20 percent
Surface fragments: About 18 percent cobbles
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi
Potential native vegetation:
Common trees: ponderosa pine
Other plants: Arizona fescue, mountain muhly, muttongrass, prairie Junegrass, sedge
Land capability subclass (nonirrigated): 7s

## Typical Profile:

A-0 to 3 inches; flaggy loam
C-3 to 14 inches; loam
R-14 to 18 inches; bedrock

## Rock outcrop

Depth to restrictive feature: 0 inches to bedrock, lithic

## Carjo soils

Landscape: Uplands
Landform: Ridges, hills
Parent material: Slope alluvium over colluvium derived from sandstone and shale Slope: 5 to 20 percent
Surface fragments: About 20 percent flagstones
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 6.2 inches (moderate)
Shrink-swell potential: About 6.9 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus ponderosa-Juniperus scopulorum/Quercus gambelii
Potential native vegetation:
Common trees: ponderosa pine, Rocky Mountain juniper
Other plants: Gambel oak, muttongrass, mountain muhly , prairie Junegrass, sedge
Land capability subclass (nonirrigated): 4s
Typical Profile:
A-0 to 5 inches; very flaggy loam
E-5 to 10 inches; flaggy clay loam
Bt-10 to 38 inches; clay loam
2R-38 to 60 inches; bedrock

## Minor Components

Hogg and similar soils
Composition: About 10 percent
Slope: 2 to 9 percent
Drainage class: Well drained
Ecological site: Mountain Valley
Topetaul and similar soils
Composition: About 10 percent
Slope: 3 to 25 percent
Drainage class: Well drained
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi

## 133-Carrick silt loam, 1 to 4 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,200 to 7,600 feet (2,195 to 2,316 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Carrick and similar soils: 90 percent
Minor components: 10 percent


Figure 13.-Brazos Peak. Typical landscape of Carrick silt loam, 1 to 4 percent slopes in the foreground used as pastureland and Rock outcrop-Bracos complex, 40 to 80 percent slopes in the far background.

## Component Descriptions

```
Carrick soils
Landscape:Valleys
Landform: Stream terraces
Parent material: Eolian deposits over stream alluvium derived from volcanic rock
Slope: }1\mathrm{ to 4 percent
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: . }06\mathrm{ to 0.2 in/hr (slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 7.2 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None
    (nonsodic)
Ecological site: Mountain Loam
Potential native vegetation: Arizona fescue, big sagebrush, bluegrass, western
    wheatgrass, needlegrass, bottlebrush squirreltail, muhly
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 3c
Typical Profile:
    A-0 to 3 inches; silt loam
    Bt1-3 to 9 inches; silty clay loam
    Bt2 to Bt4-9 to 60 inches; silty clay loam
```


## Minor Components

```
Ruson and similar soils
Composition: About 10 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Swale
```


## 136-Elpedro silt loam, 1 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,500 to 7,400 feet (1,981 to 2,256 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Elpedro and similar soils: 80 percent
Minor components: 20 percent

## Component Descriptions

## Elpedro soils

Landscape: Uplands
Landform: Hills, fan remnants

Parent material: Old alluvium derived from sandstone and shale
Slope: 1 to 5 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 2.7 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$
(nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian
ricegrass, needleandthread, fourwing saltbush
Land capability subclass (nonirrigated): 6e

## Typical Profile:

A-0 to 3 inches; silt loam
Bt-3 to 25 inches; silty clay loam
Bk-25 to 60 inches; silty clay loam

## Minor Components

Berryman and similar soils
Composition: About 8 percent
Slope: 3 to 8 percent
Drainage class: Well drained
Ecological site: Clayey
Ruson and similar soils
Composition: About 7 percent
Slope: 1 to 3 percent
Drainage class: Well drained
Ecological site: Swale

Teromote and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

## 137-Yata-Eody loams, 50 to 80 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 8,100 to 9,700 feet (2,469 to 2,957 meters)
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days

## Map Unit Composition

Yata and similar soils: 50 percent
Eody and similar soils: 40 percent
Minor components: 10 percent

## Component Descriptions

## Yata soils

Landscape: Mountains
Landform: Escarpments
Parent material: Slope alluvium over colluvium derived from igneous and sedimentary rock
Slope: 50 to 80 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 6.8 inches (moderate)
Shrink-swell potential: About 6.3 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambelii-
Symphoricarpos albus/Festuca arizonica-Carex geyeri
Potential native vegetation:
Common trees: white fir, corkbark fir, Engelmann spruce, quaking aspen, Douglas-fir
Other plants: sedge, mountain muhly, vaccinium, bluegrass
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 10 inches; loam
Bt1-10 to 21 inches; cobbly silty clay loam
Bt2 and Bt3-21 to 60 inches; very cobbly silty clay

## Eody soils

Landscape: Mountains
Landform: Escarpments
Parent material: Colluvium derived from igneous and sedimentary rock
Slope: 50 to 80 percent
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Runoff class:Very high
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos $/ \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation:
None (nonsodic)

Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambelii-
Symphoricarpos albus/Festuca arizonica-Carex geyeri
Potential native vegetation:
Common trees: white fir, corkbark fir, Engelmann spruce, quaking aspen, Douglas-fir
Other plants: sedge, mountain muhly, vaccinium, bluegrass
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 4 inches; loam
C-4 to 60 inches; silty clay loam

## Minor Components

Rock outcrop
Composition: About 10 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

## 140-Espiritu-Wauquie association, 35 to 60 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 7,000 feet (1,829 to 2,134 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Espiritu and similar soils: 45 percent
Wauquie and similar soils: 35 percent
Minor components: 20 percent
Component Descriptions

## Espiritu soils

Landscape: Uplands
Landform: South aspect escarpments
Parent material: Slope alluvium over colluvium derived from igneous rock
Slope: 35 to 60 percent
Surface fragments: About 20 percent gravel, about 25 percent cobbles
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.1 inches (low)
Shrink-swell potential: About 2.2 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Gravelly Hills

Potential native vegetation: black grama, sideoats grama, blue grama, hairy grama, muttongrass, needleandthread, oneseed juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 5 inches; very cobbly loam
Bt-5 to 19 inches; very cobbly clay loam
Bk1-19 to 40 inches; very cobbly sandy clay loam
Bk2-40 to 60 inches; very cobbly sandy loam

## Wauquie soils

Landscape: Uplands
Landform: North aspect escarpments
Parent material: Slope alluvium derived from shale over colluvium derived from granite
Slope: 35 to 60 percent
Surface fragments: About 35 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis-Juniperus monosperma/Cercocarpus montanusChrysothamnus nauseosus/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: Gambel oak, mountain big sagebrush, mountain mahogany, mountain muhly, pinyon ricegrass, bluegrass, bottlebrush squirreltail, pine dropseed, prairie junegrass, skunkbush sumac
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 3 inches; very gravelly loam
Bt1-3 to 13 inches; very gravelly sandy clay loam
Bt2-13 to 19 inches; extremely cobbly sandy clay loam
Bk-19 to 60 inches; very cobbly loam

## Minor Components

Oelop and similar soils
Composition: About 8 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

Puye and similar soils
Composition: About 7 percent
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to duripan
Drainage class: Somewhat excessively drained
Ecological site: Juniperus monosperma-Pinus edulis/Fallugia paradoxaChrysothamnus nauseosus/Bouteloua hirsuta-Bouteloua gracilis

Rock outcrop
Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

## 141-Capillo-Carjo-Vamer complex, 3 to 25 percent slopes

Map Unit Setting<br>Major Land Resource Area: 48A<br>Elevation: 7,000 to 7,500 feet (2,134 to 2,286 meters)<br>Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)<br>Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)<br>Frost-free period: 80 to 100 days

Map Unit Composition
Capillo and similar soils: 35 percent
Carjo and similar soils: 30 percent
Vamer and similar soils: 30 percent
Minor components: 5 percent
Component Descriptions

## Capillo soils

Landscape: Uplands
Landform: Breaks
Parent material: Fan alluvium derived from sandstone and shale
Slope: 3 to 10 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 10.3 inches (high)
Shrink-swell potential: About 6.7 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Loam
Potential native vegetation:
Common trees: ponderosa pine
Other plants: Gambel oak, common snowberry, muttongrass, mountain muhly, sedge
Land capability subclass (nonirrigated): 4c

Typical Profile:
A-0 to 4 inches; loam
BA-4 to 11 inches; silt loam
Bt 1 to $\mathrm{Bt} 3-11$ to 16 inches; clay
C-16 to 60 inches; clay loam

## Carjo soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over colluvium derived from sandstone and shale Slope: 3 to 15 percent
Surface fragments: About 20 percent flagstones
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 5.4 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus ponderosa-Juniperus scopulorum/Quercus gambelii
Potential native vegetation:
Common trees: Rocky Mountain juniper, ponderosa pine
Other plants: Gambel oak, muttongrass, mountain muhly , prairie Junegrass, sedge
Land capability subclass (nonirrigated): 4s
Typical Profile:
A-0 to 4 inches; flaggy loam
$\mathrm{Bt}-4$ to 31 inches; clay
2R-31 to 60 inches; bedrock

## Vamer soils

Landscape: Uplands
Landform: Breaks
Parent material: Slope alluvium over colluvium derived from sandstone and shale
Slope: 10 to 25 percent
Surface fragments: About 15 percent channers
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class:Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 3.0 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 3 percent Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation:
None (nonsodic)

Ecological site: Mountain Brush
Potential native vegetation: western wheatgrass, Arizona fescue, Gambel oak, big
sagebrush, prairie junegrass, bottlebrush squirreltail, spike muhly
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 2 inches; channery loam
Bt-2 to 19 inches; clay loam
R—19 to 60 inches; bedrock

## Minor Components

Rock outcrop
Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

## 142—Pinavetes loamy sand, 3 to 12 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 7,000 feet (1,829 to 2,134 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Pinavetes and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## Pinavetes soils

Landscape: Uplands
Landform: Dunes
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 12 percent
Depth class: Very deep
Drainage class: Excessively drained
Slowest permeability: 6.0 to $20 \mathrm{in} / \mathrm{hr}$ (rapid)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Sandy Slopes
Potential native vegetation: Indian ricegrass, blue grama, western wheatgrass, galleta, oneseed juniper, sand sagebrush, twoneedle pinyon
Land capability subclass (nonirrigated): 6e

Typical Profile:
A-0 to 2 inches; loamy sand
C-2 to 60 inches; loamy sand


Figure 14.-Typical landscape of Pinavetes loamy sand, 3 to 12 percent slopes.

## Minor Components

Palacid and similar soils
Composition: About 10 percent
Slope: 10 to 40 percent Drainage class: Well drained Ecological site: Gravelly Hills

Penistaja and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

## 145—Dermala-Rosced complex, 20 to 50 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,500 to 7,500 feet (1,981 to 2,286 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days

## Map Unit Composition

Dermala and similar soils: 50 percent
Rosced and similar soils: 35 percent
Minor components: 15 percent

## Component Descriptions

## Dermala soils

Landscape: Uplands
Landform: Hills
Parent material: Old slope alluvium over colluvium derived from igneous and sedimentary rock
Slope: 20 to 50 percent
Surface fragments: About 35 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.7 inches (high)
Shrink-swell potential: About 3.4 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, muttongrass, sedge, sideoats grama
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 3 inches; very gravelly loam
Bt-3 to 12 inches; clay loam
Btk1-12 to 32 inches; gravelly clay loam
Btk2,C-32 to 60 inches; clay loam

## Rosced soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from igneous rock
Slope: 20 to 50 percent
Surface fragments: About 45 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 3.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 10 percent Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, muttongrass, sedge, sideoats grama
Land capability subclass (nonirrigated): 7e

Typical Profile:
A-0 to 5 inches; very gravelly sandy loam
Bw1-5 to 16 inches; gravelly sandy loam
Bw2 and Bk-16 to 33 inches; very gravelly sandy loam
2C-33 to 60 inches; very gravelly coarse sand
Minor Components
Chimayo and similar soils
Composition: About 5 percent
Slope: 20 to 50 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic Drainage class: Well drained
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis

Orlie and similar soils
Composition: About 5 percent
Slope: 1 to 8 percent
Drainage class: Well drained
Ecological site: Loamy
Yarts and similar soils
Composition: About 5 percent
Slope: 1 to 4 percent
Drainage class: Well drained
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis

## 146-Parida-Palacid very gravelly sandy loams, 10 to 40 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,800 to 7,200 feet (1,768 to 2,195 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Parida and similar soils: 45 percent
Palacid and similar soils: 40 percent
Minor components: 15 percent

## Component Descriptions

## Parida soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over colluvium derived from igneous and sedimentary rock
Slope: 10 to 40 percent
Surface fragments: About 40 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 2 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Gravelly Hills
Potential native vegetation: black grama, sideoats grama, galleta, blue grama, oneseed juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

Typical Profile:
A-0 to 3 inches; very gravelly sandy loam
Bw-3 to 28 inches; gravelly sandy loam
Bk-28 to 65 inches; gravelly sandy loam
Palacid soils
Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over colluvium derived from igneous and sedimentary rock
Slope: 10 to 40 percent
Surface fragments: About 40 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 10.1 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Gravelly Hills
Potential native vegetation: black grama, sideoats grama, galleta, blue grama, oneseed juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 6e

```
Typical Profile:
    A-0 to 4 inches; very gravelly sandy loam
    AB and Bt-4 to 14 inches; loam
    Btk-14 to 45 inches; clay loam
    Bk-45 to 68 inches; gravelly clay loam
Minor Components
Rock outcrop
    Composition: About 5 percent
    Depth to restrictive feature: 0 inches to bedrock, lithic
Pena and similar soils
    Composition: About 5 percent
    Slope: 2 to }15\mathrm{ percent
    Drainage class:Well drained
    Ecological site: Pinus edulis-Juniperus monosperma/Cercocarpus montanus-
        Chrysothamnus nauseosus/Bouteloua gracilis
Yarts and similar soils
    Composition: About 5 percent
    Slope: }1\mathrm{ to 4 percent
    Drainage class:Well drained
    Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
```


## 147—Dermala-Chimayo complex, 20 to 50 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,600 to 7,800 feet (2,012 to 2,377 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Dermala and similar soils: 45 percent
Chimayo and similar soils: 40 percent
Minor components: 15 percent

## Component Descriptions

## Dermala soils

Landscape: Uplands
Landform: Hills
Parent material: Old slope alluvium over colluvium derived from igneous and sedimentary rock
Slope: 20 to 50 percent
Surface fragments: About 35 percent gravel
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 8.6 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent

Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, muttongrass, sedge, sideoats grama
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 4 inches; very gravelly loam
Bt,C-4 to 60 inches; gravelly clay loam

## Chimayo soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium derived from igneous and sedimentary rock
Slope: 20 to 50 percent
Surface fragments: About 40 percent gravel
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 0.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: sideoats grama, blue grama, prairie junegrass, mountain mahogany, oneseed juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 3 inches; very gravelly sandy loam
C-3 to 13 inches; gravelly sandy loam
R-13 to 60 inches; bedrock

## Minor Components

Rock outcrop
Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Florita and similar soils
Composition: About 5 percent
Slope: 2 to 6 percent
Drainage class: Well drained
Ecological site: Loamy
Palacid and similar soils
Composition: About 5 percent
Slope: 10 to 40 percent
Drainage class: Well drained
Ecological site: Gravelly Hills

## 148-Chita loam, 0 to 5 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 7,000 feet (1,829 to 2,134 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Chita and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Chita soils

Landscape: Uplands
Landform: Summits mesas
Parent material: Eolian deposits over slope alluvium derived from igneous and sedimentary rock
Slope: 0 to 5 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.6 inches (high)
Shrink-swell potential: About 3.0 percent (moderate)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 30 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, galleta, Indian ricegrass, needleandthread, big sagebrush, fourwing saltbush
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 3 inches; loam
BA and $\mathrm{Bt}-3$ to 10 inches; loam
Btk and Bk-10 to 38 inches; silty clay loam
2Bk-38 to 60 inches; gravelly sandy clay loam

## Minor Components

Rock outcrop
Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, lithic
Dermala and similar soils
Composition: About 5 percent
Slope: 20 to 50 percent
Drainage class: Well drained
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
Pinavetes and similar soils
Composition: About 5 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Sandy Slopes

## 149-Yarts sandy loam, 1 to 4 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,800 to 6,500 feet ( 1,768 to 1,981 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 52 degrees F. ( 8.9 to 11.1 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Yarts and similar soils: 80 percent
Minor components: 20 percent

## Component Descriptions

Yarts soils<br>Landscape:Valleys<br>Landform: Stream terraces<br>Parent material: Stream alluvium derived from sandstone and shale<br>Slope: 1 to 4 percent<br>Depth class:Very deep<br>Drainage class:Well drained<br>Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)<br>Available water capacity: About 7.1 inches (moderate)<br>Shrink-swell potential: About 1.5 percent (low)<br>Runoff class: Very low<br>Calcium carbonate average in horizon of maximum accumulation: About 10 percent<br>Gypsum average in horizon of maximum accumulation: About 1 percent

Salinity average in horizon of maximum accumulation: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis
Potential native vegetation: sand dropseed, Indian ricegrass, Mormon tea
Land capability subclass (irrigated): 2s
Land capability subclass (nonirrigated): 7s
Typical Profile:
A-0 to 3 inches; sandy loam
C-3 to 60 inches; fine sandy loam
Minor Components
Palacid and similar soils
Composition: About 10 percent
Slope: 10 to 40 percent
Drainage class: Well drained
Ecological site: Gravelly Hills
Pinavetes and similar soils
Composition: About 9 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Sandy Slopes
Riverwash
Composition: About 1 percent
Slope: 0 to 3 percent
Flooding hazard: Frequent

## 151—Razito-Fruitland complex, 1 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,500 to 6,500 feet ( 1,676 to 1,981 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Map Unit Composition
Razito and similar soils: 45 percent
Fruitland and similar soils: 40 percent
Minor components: 15 percent
Component Descriptions

## Razito soils

Landscape: Uplands
Landform: Dunes
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 5 percent
Depth class: Very deep
Drainage class: Somewhat excessively drained


Figure 15.-Typical landscape of Razito-Fruitland complex, 1 to 5 percent slopes.

Slowest permeability: 6.0 to $20 \mathrm{in} / \mathrm{hr}$ (rapid)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 4 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Deep Sand
Potential native vegetation: Indian ricegrass, blue grama, black grama, galleta, sand sagebrush, western wheatgrass
Land capability subclass (nonirrigated): 7s
Typical Profile:
A-0 to 4 inches; loamy sand
C-4 to 60 inches; loamy sand

## Fruitland soils

Landscape: Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from sandstone
Slope: 1 to 5 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)

Available water capacity: About 6.7 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Very low
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Sandy
Potential native vegetation: blue grama, western wheatgrass, bottlebrush squirreltail, dropseed, needleandthread
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 3 inches; sandy loam
C1-3 to 50 inches; fine sandy loam
C2-50 to 60 inches; loamy fine sand
Minor Components
Jocity and similar soils
Composition: About 14 percent
Slope: 0 to 1 percent
Drainage class: Well drained
Ecological site: Loamy
Riverwash
Composition: About 1 percent
Slope: 0 to 3 percent
Flooding hazard: Frequent

## 170—Sedillo cobbly loam, 0 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,500 to 7,200 feet (1,981 to 2,195 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Sedillo and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## Sedillo soils

Landscape: Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous and sedimentary rock
Slope: 0 to 5 percent
Surface fragments: About 20 percent cobbles
Depth class: Very deep

Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 4.9 inches (low)
Shrink-swell potential: About 2.8 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 23 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Stony Loam
Potential native vegetation: spike muhly, western wheatgrass, big sagebrush, New
Mexico Feathergrass, blue grama, galleta, fourwing saltbush, winterfat
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 12 inches; cobbly loam
Bt and Btk-12 to 36 inches; cobbly sandy clay loam
Bk-36 to 60 inches; very cobbly sandy loam

## Minor Components

Florita and similar soils
Composition: About 8 percent
Slope: 2 to 6 percent
Drainage class: Well drained
Ecological site: Loamy
Oelop and similar soils
Composition: About 7 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

## 173-Oelop fine sandy loam, 1 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,900 to 6,700 feet (1,798 to 2,042 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Oelop and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## Oelop soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from sandstone and shale

Slope: 1 to 5 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 3.7 percent (moderate)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $3 \mathrm{mmhos} / \mathrm{cm}$ (very slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, alkali sacaton, bottlebrush squirreltail, fourwing saltbush, galleta, winterfat
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 5 inches; fine sandy loam
Bt,Btk,Bk1-5 to 45 inches; clay loam
Bk2-45 to 60 inches; sandy loam

## Minor Components

Espiritu and similar soils
Composition: About 8 percent
Slope: 35 to 60 percent
Drainage class: Well drained
Ecological site: Gravelly Hills
Wauquie and similar soils
Composition: About 7 percent
Slope: 35 to 60 percent
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Cercocarpus montanusChrysothamnus nauseosus/Bouteloua gracilis

## 180-Oelop loam, 0 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,500 to 7,200 feet (1,981 to 2,195 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Oelop and similar soils: 90 percent
Minor components: 10 percent

## Component Descriptions

## Oelop soils <br> Landscape:Valleys <br> Landform: Stream terraces <br> Parent material: Stream alluvium derived from igneous and sedimentary rock <br> Slope: 0 to 5 percent <br> Depth class: Very deep <br> Drainage class: Well drained <br> Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow) <br> Available water capacity: About 11.2 inches (high) <br> Shrink-swell potential: About 4.5 percent (moderate) <br> Runoff class: Low <br> Calcium carbonate average in horizon of maximum accumulation: About 6 percent <br> Gypsum average in horizon of maximum accumulation: None <br> Salinity average in horizon of maximum accumulation: About 3 mmhos/cm (very slightly saline) <br> Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic) <br> Ecological site: Loamy <br> Potential native vegetation: blue grama, western wheatgrass, spike muhly, alkali <br> sacaton, bottlebrush squirreltail, fourwing saltbush, galleta, winterfat <br> Land capability subclass (irrigated): 3e <br> Land capability subclass (nonirrigated): 6c <br> Typical Profile: <br> A-0 to 1 inches; loam <br> $\mathrm{Bt}, \mathrm{Bk}-1$ to 60 inches; clay loam <br> Minor Components <br> Florita and similar soils <br> Composition: About 5 percent <br> Slope: 2 to 6 percent <br> Drainage class: Well drained <br> Ecological site: Loamy <br> Sedillo and similar soils <br> Composition: About 5 percent <br> Slope: 0 to 3 percent <br> Drainage class: Well drained <br> Ecological site: Stony Loam

## 182—Oelop sandy loam, 5 to 9 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,500 to 7,200 feet ( 1,981 to 2,195 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. ( 8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days

## Map Unit Composition

Oelop and similar soils: 90 percent
Minor components: 10 percent

## Component Descriptions

## Oelop soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous and sedimentary rock
Slope: 5 to 9 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.6 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $3 \mathrm{mmhos} / \mathrm{cm}$ (very slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: western wheatgrass, big sagebrush, galleta, Indian
ricegrass, needleandthread, fourwing saltbush
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 3 inches; sandy loam
Bt-3 to 11 inches; clay loam
Bk-11 to 60 inches; sandy clay loam

## Minor Components

Florita and similar soils
Composition: About 5 percent
Slope: 2 to 6 percent
Drainage class: Well drained
Ecological site: Loamy
Sedillo and similar soils
Composition: About 5 percent
Slope: 0 to 3 percent
Drainage class: Well drained
Ecological site: Stony Loam

## 190—Sedillo loam, 0 to 3 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,500 to 7,200 feet (1,981 to 2,195 meters)
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)

Mean annual air temperature: 48 to 50 degrees F . ( 8.9 to 10.0 degrees C.) Frost-free period: 120 to 140 days

## Map Unit Composition

Sedillo and similar soils: 90 percent
Minor components: 10 percent

## Component Descriptions

## Sedillo soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous and sedimentary rock
Slope: 0 to 3 percent
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 4.3 inches (low)
Shrink-swell potential: About 2.6 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 23 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Stony Loam
Potential native vegetation: spike muhly, western wheatgrass, big sagebrush, New
Mexico Feathergrass, blue grama, galleta, fourwing saltbush, winterfat
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 5 inches; loam
Bt and Btk-5 to 25 inches; cobbly sandy clay loam
Bk-25 to 60 inches; very cobbly sandy loam

## Minor Components

Florita and similar soils
Composition: About 5 percent
Slope: 2 to 6 percent
Drainage class: Well drained
Ecological site: Loamy
Oelop and similar soils
Composition: About 5 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

## 200—Katlon silt loam, 25 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 48A
Elevation: 8,500 to 9,500 feet (2,591 to 2,896 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days

## Map Unit Composition

Katlon and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Katlon soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from igneous and sedimentary rock
Slope: 25 to 45 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 11.6 inches (high)
Shrink-swell potential: About 3.0 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambeliiSymphoricarpos albus/Festuca arizonica-Carex geyeri
Potential native vegetation:
Common trees: white fir, corkbark fir, Engelmann spruce, quaking aspen, Douglas-fir
Other plants: sedge, mountain muhly, vaccinium, bluegrass
Land capability subclass (nonirrigated): 7e
Typical Profile:
O-0 to 4 inches; slightly decomposed plant material
A-4 to 18 inches; silt loam
E-18 to 31 inches; silt loam
Bt-31 to 80 inches; silty clay loam

## Minor Components

Angostura and similar soils
Composition: About 8 percent
Slope: 15 to 45 percent
Drainage class: Well drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

Hogg and similar soils
Composition: About 7 percent
Slope: 2 to 9 percent
Drainage class: Well drained
Ecological site: Mountain Valley

## 201—Lobat-Abreu gravelly loams, 15 to 60 percent slopes

Map Unit Setting
Major Land Resource Area: 48A
Elevation: 8,200 to 9,800 feet (2,499 to 2,987 meters)
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Map Unit Composition
Lobat and similar soils: 45 percent
Abreu and similar soils: 40 percent
Minor components: 15 percent

## Component Descriptions

## Lobat soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from igneous rock
Slope: 15 to 60 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 4.3 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambeliiSymphoricarpos albus/Festuca arizonica-Carex geyeri
Potential native vegetation:
Common trees: white fir, corkbark fir, Engelmann spruce, quaking aspen, Douglas-fir
Other plants: sedge, mountain muhly, vaccinium, bluegrass
Land capability subclass (nonirrigated): 7e
Typical Profile:
O-O to 1 inches; slightly decomposed plant material
A-1 to 7 inches; gravelly loam
Bt-7 to 48 inches; gravelly clay loam
C-48 to 60 inches; gravelly sandy clay loam

## Abreu soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from igneous rock
Slope: 15 to 60 percent
Depth class: Deep
Depth to restrictive feature: 40 to 60 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 3.9 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambeliiSymphoricarpos albus/Festuca arizonica-Carex geyeri
Potential native vegetation:
Common trees: white fir, corkbark fir, Engelmann spruce, quaking aspen, Douglas-fir
Other plants: sedge, mountain muhly, vaccinium, bluegrass
Land capability subclass (nonirrigated): 7e
Typical Profile:
Oi-0 to 2 inches; slightly decomposed plant material
A-2 to 4 inches; gravelly loam
E-4 to 15 inches; very gravelly loam
Bt-15 to 58 inches; very gravelly clay loam
R—58 to 60 inches; bedrock

## Minor Components

Angostura and similar soils
Composition: About 5 percent
Slope: 15 to 45 percent
Drainage class: Well drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Elbuck and similar soils
Composition: About 5 percent
Slope: 5 to 20 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica
Nabor and similar soils
Composition: About 5 percent
Slope: 5 to 35 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica

# 203-Nabor-Elbuck complex, 5 to 35 percent slopes 

Map Unit Setting<br>Major Land Resource Area: 48A<br>Elevation: 7,700 to 8,900 feet (2,347 to 2,713 meters)<br>Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)<br>Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)<br>Frost-free period: 70 to 90 days<br>\section*{Map Unit Composition}

Nabor and similar soils: 55 percent
Elbuck and similar soils: 30 percent
Minor components: 15 percent

## Component Descriptions

## Nabor soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium derived from shale
Slope: 5 to 35 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 6.8 percent (high)
Runoff class: Very high
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica
Potential native vegetation:
Common trees: ponderosa pine, Douglas-fir
Other plants: Arizona fescue, mountain muhly, vaccinium, Gambel oak, brome
Land capability subclass (nonirrigated): 6e

Typical Profile:
A-0 to 6 inches; silty clay loam
Bt1-6 to 17 inches; silty clay loam
Bt2 and Bt3-17 to 37 inches; silty clay
Bk-37 to 60 inches; silty clay loam
Elbuck soils
Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium over colluvium derived from sandstone and shale
Slope: 5 to 20 percent
Surface fragments: About 20 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)

```
Available water capacity: About 8.6 inches (moderate)
Shrink-swell potential: About }1.5\mathrm{ percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 1 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About }1\textrm{mmhos/cm
    (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None
    (nonsodic)
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica
Potential native vegetation:
    Common trees: ponderosa pine, Douglas-fir
    Other plants: Arizona fescue, mountain muhly, vaccinium, Gambel oak, brome
Land capability subclass (nonirrigated): 6e
Typical Profile:
    A-0 to 3 inches; gravelly loam
    Bt1-3 to }14\mathrm{ inches; gravelly loam
    Bt2 and C-14 to 60 inches; gravelly clay loam
Minor Components
Rombo and similar soils
    Composition: About 9 percent
    Slope: }5\mathrm{ to }25\mathrm{ percent
    Depth to restrictive feature: }20\mathrm{ to }40\mathrm{ inches to bedrock, paralithic
    Drainage class: Well drained
    Ecological site: Mountain Shale
Wiggler and similar soils
    Composition: About 5 percent
    Slope: 5 to 25 percent
    Depth to restrictive feature: }10\mathrm{ to 20 inches to bedrock, paralithic
    Drainage class:Well drained
    Ecological site: Mountain Shale
Tottles and similar soils
    Composition: About }1\mathrm{ percent
    Slope: 0 to 2 percent
    Drainage class: Poorly drained
    Ecological site: Mountain Meadow
```


## 206-Angostura-Gromes complex, 15 to 35 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 9,700 to 11,000 feet (2,957 to 3,353 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days

## Map Unit Composition

Angostura and similar soils: 60 percent
Gromes and similar soils: 25 percent
Minor components: 15 percent

## Component Descriptions

## Angostura soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium over colluvium derived from igneous rock
Slope: 15 to 35 percent
Surface fragments: About 17 percent cobbles
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 5.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue, geranium, mountain muhly, strawberry
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 4 inches; cobbly loam
E and Bt1-4 to 43 inches; very cobbly clay loam
Bt2 and C-43 to 60 inches; extremely gravelly clay loam

## Gromes soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium over colluvium derived from igneous and metamorphic rock
Slope: 15 to 35 percent
Surface fragments: About 20 percent gravel
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 8.2 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue, geranium, mountain muhly, strawberry Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 3 inches; gravelly loam
$\mathrm{Bw}, \mathrm{C}-3$ to 60 inches; very cobbly clay loam

## Minor Components

Bracos and similar soils
Composition: About 5 percent
Slope: 40 to 80 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class:Well drained
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambelii-
Symphoricarpos albus/Festuca arizonica-Carex geyeri
Bywell and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow
Croftshaw and similar soils
Composition: About 5 percent
Slope: 5 to 15 percent
Drainage class: Well drained
Ecological site: Subalpine Grassland

## 207-Gromes-Rock outcrop complex, 15 to 40 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 10,000 to 10,700 feet (3,048 to 3,261 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Map Unit Composition
Gromes and similar soils: 65 percent
Rock outcrop: 20 percent
Minor components: 15 percent
Component Descriptions

## Gromes soils

Landscape: Mountains
Landform: Mountain slopes

Parent material: Slope alluvium over colluvium derived from igneous rock Slope: 15 to 40 percent
Surface fragments: About 25 percent cobbles
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 8.2 inches (moderate)
Shrink-swell potential: About 4.1 percent (moderate)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue , geranium, mountain muhly, strawberry
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 11 inches; cobbly loam
Bw,C-11 to 60 inches; very cobbly loam

## Rock outcrop

Depth to restrictive feature: 0 inches to bedrock, lithic

## Minor Components

Bywell and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow
Croftshaw and similar soils
Composition: About 5 percent
Slope: 5 to 15 percent
Drainage class: Well drained
Ecological site: Subalpine Grassland
Crubas and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow

## 208-Ess-Croftshaw complex, 3 to 20 percent slopes

Map Unit Setting<br>Major Land Resource Area: 48A<br>Elevation: 9,500 to 10,400 feet (2,896 to 3,170 meters)<br>Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)<br>Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)<br>Frost-free period: 50 to 70 days<br>Map Unit Composition

Ess and similar soils: 45 percent
Croftshaw and similar soils: 35 percent
Minor components: 20 percent
Component Descriptions

## Ess soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium over colluvium derived from igneous rock
Slope: 3 to 15 percent
Surface fragments: About 20 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 3.0 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Subalpine Grassland
Potential native vegetation: mountain brome, Thurber fescue , mountain muhly,
Arizona fescue, needlegrass, tufted hairgrass
Land capability subclass (nonirrigated): 6e
Typical Profile:
A-0 to 13 inches; gravelly loam
Bt-13 to 40 inches; very cobbly sandy clay loam
C-40 to 60 inches; very gravelly sandy clay loam

## Croftshaw soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from igneous rock
Slope: 3 to 20 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 11.5 inches (high)
Shrink-swell potential: About 4.2 percent (moderate)
Runoff class: Medium

Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Subalpine Grassland
Potential native vegetation: mountain brome, Thurber fescue , mountain muhly,
Arizona fescue, needlegrass, tufted hairgrass
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 10 inches; loam
Bt-10 to 60 inches; clay loam

## Minor Components

Bywell and similar soils
Composition: About 8 percent
Slope: 0 to 2 percent
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow

Crubas and similar soils
Composition: About 7 percent
Slope: 0 to 2 percent
Drainage class: Poorly drained
Flooding hazard: Frequent
Ecological site: Mountain Meadow
Gromes and similar soils
Composition: About 5 percent
Slope: 15 to 40 percent
Drainage class: Well drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

# 209-Crubas-Bywell-Croftshaw complex, 0 to 15 percent slopes 

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 9,700 to 10,400 feet (2,957 to 3,170 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Map Unit Composition
Crubas and similar soils: 40 percent
Bywell and similar soils: 30 percent
Croftshaw and similar soils: 20 percent
Minor components: 10 percent

## Component Descriptions

## Crubas soils

Landscape:Valleys
Landform: Stream terraces, swales
Parent material: Stream alluvium derived from igneous rock
Slope: 0 to 2 percent
Depth class: Very deep
Drainage class: Poorly drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 9.3 inches (high)
Shrink-swell potential: About 6.3 percent (high)
Flooding hazard: Frequent
Seasonal high water table depth: 0 to 20 inches
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Meadow
Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (nonirrigated): 6c
Typical Profile:
Oi-0 to 3 inches; slightly decomposed plant material
A-3 to 15 inches; clay loam
Cg-15 to 37 inches; clay
2Cg-37 to 60 inches; gravelly clay

## Bywell soils

Landscape: Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous rock
Slope: 0 to 2 percent
Depth class: Very deep
Depth to restrictive feature: 40 to 60 inches to strongly contrasting textural stratification
Drainage class: Poorly drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 3.5 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: 0 to 30 inches
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Meadow

Potential native vegetation: tufted hairgrass, sedge, bulrush, mountain brome, western wheatgrass, clover, red fescue, shrubby cinquefoil
Land capability subclass (nonirrigated): 6c
Typical Profile:
A1-0 to 4 inches; silt loam
A2-4 to 11 inches; loam
2C and 2Cg—11 to 42 inches; very cobbly coarse sandy loam
$3 \mathrm{Cg}-42$ to 60 inches; fragmental material

## Croftshaw soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Colluvium derived from igneous rock
Slope: 5 to 15 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 9.1 inches (high)
Shrink-swell potential: About 2.6 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Subalpine Grassland
Potential native vegetation: sedge, sheep fescue, Thurber fescue, clover, muttongrass
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 8 inches; loam
Bt-8 to 28 inches; clay loam
2C-28 to 60 inches; sandy loam

## Minor Components

Gromes and similar soils
Composition: About 9 percent
Slope: 15 to 40 percent
Drainage class: Well drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Riverwash
Composition: About 1 percent
Slope: 0 to 3 percent
Flooding hazard: Frequent

# 210—Rock outcrop-Bracos complex, 40 to 80 percent slopes 

Map Unit Setting

Major Land Resource Area: 48A
Elevation: 8,500 to 9,900 feet (2,591 to 3,018 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days

## Map Unit Composition

Rock outcrop: 60 percent
Bracos and similar soils: 30 percent
Minor components: 10 percent
Component Descriptions

## Rock outcrop

Depth to restrictive feature: 0 inches to bedrock, lithic

## Bracos soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium over colluvium derived from igneous rock Slope: 40 to 80 percent
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic


Figure 16.-Typical landscape of Rock outcrop-Bracos complex, 40 to 80 percent slopes.

Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 2.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambeliiSymphoricarpos albus/Festuca arizonica-Carex geyeri
Potential native vegetation:
Common trees: white fir, corkbark fir, Engelmann spruce, quaking aspen, Douglas-fir
Other plants: sedge, mountain muhly, vaccinium, bluegrass
Land capability subclass (nonirrigated): 7e
Typical Profile:
Oi-0 to 3 inches; slightly decomposed plant material
A-3 to 8 inches; very stony loam
C1-8 to 21 inches; very stony loam
C2—21 to 32 inches; extremely stony sandy loam
R-32 to 60 inches; bedrock
Minor Components
Angostura and similar soils
Composition: About 5 percent
Slope: 15 to 45 percent
Drainage class: Well drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Gromes and similar soils
Composition: About 5 percent
Slope: 15 to 40 percent
Drainage class: Well drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

## 211-Angostura very cobbly loam, 15 to 40 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 9,200 to 10,400 feet (2,804 to 3,170 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Map Unit Composition
Angostura and similar soils: 90 percent
Minor components: 10 percent

## Component Descriptions

## Angostura soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from igneous rock
Slope: 15 to 40 percent
Surface fragments: About 35 percent cobbles
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None
(nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue, geranium, mountain muhly, strawberry
Land capability subclass (nonirrigated): 7e
Typical Profile:
A and E-0 to 8 inches; very cobbly loam
Bt and C-8 to 60 inches; very cobbly clay loam

## Minor Components

Croftshaw and similar soils
Composition: About 5 percent
Slope: 5 to 15 percent
Drainage class: Well drained
Ecological site: Subalpine Grassland
Saragote and similar soils
Composition: About 5 percent
Slope: 2 to 5 percent
Drainage class: Somewhat poorly drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

## 214-Quimera-Vamer very channery clay loams, 10 to 35 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 6,900 to 7,400 feet ( 2,103 to 2,256 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Quimera and similar soils: 60 percent
Vamer and similar soils: 25 percent
Minor components: 15 percent

## Component Descriptions

## Quimera soils

Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over colluvium derived from sandstone and shale
Slope: 15 to 35 percent
Surface fragments: About 50 percent channers
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class:Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 3.0 inches (very low)
Shrink-swell potential: About 5.0 percent (moderate)
Runoff class: Very high
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 3 mmhos/cm (very slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 2 (slightly sodic)
Ecological site: Mountain Brush
Potential native vegetation: western wheatgrass, Arizona fescue, Gambel oak, big sagebrush, prairie junegrass, bottlebrush squirreltail, spike muhly
Land capability subclass (nonirrigated): 7s

## Typical Profile:

A-0 to 3 inches; very channery clay loam
Bw and BC-3 to 15 inches; clay loam
C-15 to 17 inches; clay
R—17 to 60 inches; bedrock
Vamer soils
Landscape: Uplands
Landform: Hills
Parent material: Slope alluvium over colluvium derived from sandstone and shale
Slope: 10 to 35 percent
Surface fragments: About 50 percent channers
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 2.9 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Very high
Calcium carbonate average in horizon of maximum accumulation: About 3 percent Gypsum average in horizon of maximum accumulation: None

Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Brush
Potential native vegetation: western wheatgrass, Arizona fescue, Gambel oak, big sagebrush, prairie junegrass, bottlebrush squirreltail, spike muhly
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 3 inches; very channery clay loam
Bt-3 to 19 inches; clay
R—19 to 60 inches; bedrock
Minor Components
Capillo and similar soils
Composition: About 5 percent
Slope: 3 to 10 percent
Drainage class: Well drained
Ecological site: Mountain Loam
Carjo and similar soils
Composition: About 5 percent
Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Pinus ponderosa-Juniperus scopulorum/Quercus gambelii
Suposo and similar soils
Composition: About 5 percent
Slope: 1 to 6 percent
Drainage class: Well drained
Ecological site: Mountain Shale

## 215-Saragote-Ess complex, 2 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 9,500 to 11,400 feet (2,896 to 3,475 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Map Unit Composition
Saragote and similar soils: 45 percent
Ess and similar soils: 35 percent
Minor components: 20 percent

## Component Descriptions

## Saragote soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium derived from igneous rock

Slope: 2 to 5 percent
Depth class: Very deep
Drainage class: Somewhat poorly drained
Slowest permeability: . 06 to 0.2 in/hr (slow)
Available water capacity: About 7.7 inches (moderate)
Shrink-swell potential: About 6.9 percent (high)
Seasonal high water table depth: About 24 to 42 inches
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue , geranium, mountain muhly, strawberry
Land capability subclass (nonirrigated): 6c

## Typical Profile:

Oi-0 to 1 inches; slightly decomposed plant material
A-1 to 9 inches; loam
Bt and C-9 to 60 inches; very cobbly clay loam

## Ess soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium over colluvium derived from igneous rock
Slope: 2 to 8 percent
Surface fragments: About 20 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.5 inches (low)
Shrink-swell potential: About 3.0 percent (moderate)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Subalpine Grassland
Potential native vegetation: mountain brome, Thurber fescue , mountain muhly,
Arizona fescue, needlegrass, tufted hairgrass
Land capability subclass (nonirrigated): 6 s
Typical Profile:
A-0 to 12 inches; gravelly loam
Bt-12 to 40 inches; very cobbly clay loam
C-40 to 60 inches; very gravelly sandy clay loam

Minor Components<br>Angostura and similar soils<br>Composition: About 8 percent<br>Slope: 15 to 45 percent<br>Drainage class: Well drained<br>Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium<br>Croftshaw and similar soils<br>Composition: About 7 percent<br>Slope: 5 to 15 percent<br>Drainage class: Well drained<br>Ecological site: Subalpine Grassland<br>Crubas and similar soils<br>Composition: About 5 percent<br>Slope: 0 to 2 percent<br>Drainage class: Poorly drained<br>Flooding hazard: Frequent<br>Ecological site: Mountain Meadow

## 216-Angostura very cobbly sandy loam, 15 to 45 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 9,500 to 10,500 feet ( 2,896 to 3,200 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Map Unit Composition
Angostura and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Angostura soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Slope alluvium over colluvium derived from igneous rock
Slope: 15 to 45 percent
Surface fragments: About 35 percent cobbles
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 3.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)

Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue , geranium, mountain muhly, strawberry Land capability subclass (nonirrigated): 7e

## Typical Profile:

A and E-0 to 12 inches; very cobbly sandy loam
Bt and C-12 to 60 inches; extremely gravelly sandy clay loam

## Minor Components

Croftshaw and similar soils
Composition: About 8 percent
Slope: 5 to 15 percent
Drainage class: Well drained
Ecological site: Subalpine Grassland
Ess and similar soils
Composition: About 7 percent
Slope: 3 to 15 percent
Drainage class: Well drained
Ecological site: Subalpine Grassland

## 220—Rock outcrop-Vessilla-Menefee complex, 15 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,100 to 7,200 feet ( 1,859 to 2,195 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Rock outcrop: 40 percent
Vessilla and similar soils: 30 percent
Menefee and similar soils: 20 percent
Minor components: 10 percent
Component Descriptions

## Rock outcrop

Depth to restrictive feature: 0 inches to bedrock, lithic

## Vessilla soils

Landscape: Uplands
Landform: Breaks
Parent material: Slope alluvium over residuum weathered from sandstone
Slope: 15 to 45 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained

Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Indian ricegrass, mountain big sagebrush, oak, sideoats grama
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 2 inches; sandy loam
C-2 to 10 inches; sandy loam
R-10 to 60 inches; bedrock

## Menefee soils

Landscape: Uplands
Landform: Breaks
Parent material: Colluvium over residuum weathered from shale
Slope: 15 to 45 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Very high
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, galleta, Gambel oak, big sagebrush, sideoats grama
Land capability subclass (nonirrigated): 7e
Typical Profile:
A-0 to 1 inches; clay loam
C-1 to 10 inches; clay loam
Cr-10 to 60 inches; bedrock

## Minor Components

## Rubble land

Composition: About 5 percent
Badland
Composition: About 5 percent
Slope: 1 to 50 percent
Depth to restrictive feature: 0 inches to bedrock, paralithic
Drainage class: Somewhat excessively drained

## 228-Suposo-Brycan complex, 1 to 6 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 6,900 to 7,400 feet (2,103 to 2,256 meters)
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Suposo and similar soils: 50 percent
Brycan and similar soils: 35 percent
Minor components: 15 percent

## Component Descriptions

## Suposo soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from shale
Slope: 1 to 6 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 9.6 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 13 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Shale
Potential native vegetation: western wheatgrass, alkali sacaton, bottlebrush squirreltail, prairie junegrass
Land capability subclass (nonirrigated): 4c
Typical Profile:
A-0 to 4 inches; clay loam
Bt-4 to 16 inches; clay
Btk-16 to 31 inches; clay
BCk-31 to 60 inches; clay

## Brycan soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from sandstone and shale
Slope: 1 to 3 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 10.5 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Mountain Shale
Potential native vegetation: Arizona fescue, needleandthread, little bluestem, western wheatgrass
Land capability subclass (nonirrigated): 6w

## Typical Profile:

A—0 to 10 inches; loam
Bw and C-10 to 60 inches; clay loam

## Minor Components

Quimera and similar soils
Composition: About 8 percent
Slope: 15 to 35 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Mountain Brush
Vamer and similar soils
Composition: About 7 percent
Slope: 10 to 35 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, lithic
Drainage class: Well drained
Ecological site: Mountain Brush

## 230-Badland

Map Unit Setting
Major Land Resource Area: 36

## Map Unit Composition

Badland: 90 percent
Minor components: 10 percent

## Component Descriptions

```
Badland
Landscape: Uplands
Landform: Breaks, hills
Parent material: Shale
Slope: }1\mathrm{ to }50\mathrm{ percent
Depth to restrictive feature: 0 inches to bedrock, paralithic
Drainage class: Somewhat excessively drained
Runoff class:Very high
Land capability subclass (nonirrigated): }
Minor Components
Menefee and similar soils
    Composition: About }10\mathrm{ percent
    Slope: }8\mathrm{ to }25\mathrm{ percent
    Depth to restrictive feature: }10\mathrm{ to 20 inches to bedrock, paralithic
    Drainage class:Well drained
    Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua
        gracilis
```


## 240—Riverwash

## Map Unit Setting

Major Land Resource Area: 36

## Map Unit Composition

Riverwash, gravelly: 100 percent

## Component Descriptions

## Riverwash, gravelly

Landscape:Valleys
Landform: Flood plains, streams
Parent material: Stream alluvium derived from sedimentary rock
Slope: 0 to 3 percent
Surface fragments: About 8 percent gravel, about 60 percent (shape or size unspecified)
Slowest permeability: 6.0 to $20 \mathrm{in} / \mathrm{hr}$ (rapid)
Available water capacity: About 2.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: 0 to 24 inches
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 1
(slightly sodic)
Land capability subclass (nonirrigated): 8w

# 241—Florita-Rock outcrop complex, 15 to 45 percent slopes 

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,700 to 6,900 feet ( 1,737 to 2,103 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Florita and similar soils: 55 percent
Rock outcrop: 25 percent
Minor components: 20 percent
Component Descriptions

## Florita soils

Landscape: Uplands
Landform: Hills
Parent material: Eolian deposits over slope alluvium derived from sandstone
Slope: 15 to 45 percent
Surface fragments: About 22 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 7.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 7
(slightly sodic)
Ecological site: Gravelly Hills
Potential native vegetation: black grama, sideoats grama, blue grama, hairy grama, muttongrass, needleandthread, oneseed juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 3 inches; gravelly fine sandy loam
C1-3 to 38 inches; sandy loam
C2-38 to 60 inches; sandy loam

## Rock outcrop

Depth to restrictive feature: 0 inches to bedrock, lithic

## Minor Components

Dermala and similar soils
Composition: About 8 percent
Slope: 20 to 50 percent
Drainage class: Well drained
Ecological site: Pinus edulis/Rhus trilobata/Bouteloua gracilis

Losmarios and similar soils
Composition: About 7 percent
Slope: 10 to 35 percent
Drainage class: Well drained
Ecological site: Gravelly
Parida and similar soils
Composition: About 5 percent
Slope: 10 to 40 percent
Drainage class: Well drained
Ecological site: Gravelly Hills

# 242—Tinaja-Rock outcrop complex, 45 to 75 percent slopes 

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,800 to 7,800 feet (1,768 to 2,377 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Tinaja and similar soils: 50 percent
Rock outcrop: 30 percent
Minor components: 20 percent
Component Descriptions

## Tinaja soils

Landscape: Uplands
Landform: Escarpments
Parent material: Colluvium derived from sandstone
Slope: 45 to 75 percent
Surface fragments: About 60 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 25 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis-Juniperus monosperma/Cercocarpus montanus-
Chrysothamnus nauseosus/Bouteloua gracilis


Figure 17.-Typical landscape of Florita-Rock outcrop complex, 15 to 45 percent slopes in the foreground and Tinaja-Rock outcrop complex, 45 to 75 percent slopes in the background.

## Potential native vegetation:

Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, muttongrass, sideoats grama, galleta, true mountain mahogany
Land capability subclass (nonirrigated): 7e

## Typical Profile:

A-0 to 4 inches; extremely gravelly loam
Bk1-4 to 43 inches; very cobbly sandy clay loam
2Bk2-43 to 60 inches; sandy loam

## Rock outcrop

Depth to restrictive feature: 0 inches to bedrock, lithic

## Minor Components

Chita and similar soils
Composition: About 8 percent
Slope: 0 to 5 percent
Drainage class: Well drained
Ecological site: Loamy
Menefee and similar soils
Composition: About 7 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic

Menefee and similar soils
Composition: About 7 percent
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

Teromote and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

## 243—Penistaja fine sandy loam, 2 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 6,600 feet (1,829 to 2,012 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days

## Map Unit Composition

Penistaja and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## Penistaja soils

Landscape: Uplands
Landform: Summits mesas, fan remnants
Parent material: Eolian deposits over fan alluvium derived from sandstone and shale
Slope: 2 to 8 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 8.7 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 8 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, bottlebrush squirreltail, galleta, sand dropseed
Land capability subclass (nonirrigated): 6c

Typical Profile:
A-0 to 3 inches; fine sandy loam
Bt1 and Bt2-3 to 18 inches; sandy clay loam
Bk-18 to 60 inches; sandy loam
Minor Components
Losmarios and similar soils
Composition: About 8 percent
Slope: 10 to 35 percent
Drainage class: Well drained
Ecological site: Gravelly
Pinavetes and similar soils
Composition: About 7 percent
Slope: 3 to 12 percent
Drainage class: Excessively drained
Ecological site: Sandy Slopes

## 244—Scholle-Silver loams, 1 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 6,800 feet ( 1,829 to 2,073 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. ( 8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Scholle and similar soils: 60 percent
Silver and similar soils: 30 percent
Minor components: 10 percent

## Component Descriptions

## Scholle soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous and sedimentary rock
Slope: 1 to 5 percent
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 6.9 inches (moderate)
Shrink-swell potential: About 3.8 percent (moderate)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 23 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy

Potential native vegetation: blue grama, western wheatgrass, spike muhly, bottlebrush squirreltail, needlegrass, winterfat
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A and BA—0 to 7 inches; loam
Btk1-7 to 17 inches; sandy clay loam
Btk2—17 to 24 inches; gravelly clay loam
Bk-24 to 60 inches; gravelly sandy clay loam

## Silver soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from igneous and sedimentary rock
Slope: 1 to 5 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to 0.2 in/hr (slow)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 6.1 percent (high)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 13 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, bottlebrush squirreltail, needlegrass, winterfat
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 2 inches; loam
Bt and Btk-2 to 34 inches; clay loam
Bk-34 to 48 inches; sandy clay loam
C-48 to 60 inches; cobbly sandy clay loam

## Minor Components

Losmarios and similar soils
Composition: About 5 percent
Slope: 10 to 35 percent
Drainage class: Well drained
Ecological site: Gravelly
Wenota and similar soils
Composition: About 5 percent
Slope: 1 to 6 percent Drainage class: Well drained
Flooding hazard: Occasional
Ecological site: Clayey Bottomland

## 245-Maia-Manzano complex, 0 to 5 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 7,800 feet (2,164 to 2,377 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Maia and similar soils: 65 percent
Manzano and similar soils: 20 percent
Minor components: 15 percent

## Component Descriptions

## Maia soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Stream alluvium derived from volcanic rock
Slope: 1 to 5 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} / \mathrm{hr}$ (moderately slow)
Available water capacity: About 8.0 inches (moderate)
Shrink-swell potential: About 2.3 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 23 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, bottlebrush squirreltail, fourwing saltbush, galleta, other half shrubs, sand dropseed
Land capability subclass (nonirrigated): 6e
Typical Profile:
A and Bt1-0 to 10 inches; loam
Bt2-10 to 16 inches; clay loam
Btk-16 to 25 inches; gravelly clay loam
Bk-25 to 60 inches; gravelly loam

## Manzano soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from volcanic rock
Slope: 0 to 2 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 8.7 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)

```
Flooding hazard: Occasional
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm
    (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None
    (nonsodic)
Ecological site: Swale
Potential native vegetation: western wheatgrass, alkali sacaton, big sagebrush,
fourwing saltbush, galleta
Land capability subclass (nonirrigated): 6c
Typical Profile:
    A-0 to 3 inches; fine sandy loam
    Bw and C1-3 to 49 inches; loam
    2C2-49 to 60 inches; gravelly loamy sand
Minor Components
Rock outcrop
    Composition: About 5 percent
    Depth to restrictive feature: 0 inches to bedrock, lithic
Espiritu and similar soils
    Composition: About 5 percent
    Slope: }35\mathrm{ to }60\mathrm{ percent
    Drainage class:Well drained
    Ecological site: Gravelly Hills
Pena and similar soils
    Composition: About 5 percent
    Slope: 2 to }15\mathrm{ percent
    Drainage class:Well drained
    Ecological site: Pinus edulis-Juniperus monosperma/Cercocarpus montanus-
        Chrysothamnus nauseosus/Bouteloua gracilis
```


## 246-Pena gravelly sandy loam, 2 to 15 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,100 to 7,800 feet (2,164 to 2,377 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Pena and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

Pena soils
Landscape: Uplands
Landform: Bajadas, hills

Parent material: Fan alluvium derived from volcanic rock
Slope: 2 to 15 percent
Surface fragments: About 22 percent gravel
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 23 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Pinus edulis-Juniperus monosperma/Cercocarpus montanusChrysothamnus nauseosus/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: muttongrass, bottlebrush squirreltail, western wheatgrass, broom snakeweed, mountain mahogany, muhly
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A1-0 to 2 inches; gravelly sandy loam
A2 and Bk1-2 to 30 inches; very cobbly sandy loam
Bk2 and Bk3-30 to 60 inches; very cobbly sandy loam

## Minor Components

Maia and similar soils
Composition: About 5 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy
Manzano and similar soils
Composition: About 5 percent
Slope: 0 to 2 percent
Drainage class: Well drained
Flooding hazard: Occasional
Ecological site: Swale
Tinaja and similar soils
Composition: About 5 percent
Slope: 45 to 75 percent
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Cercocarpus montanusChrysothamnus nauseosus/Bouteloua gracilis

## 247-Wenota silty clay loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 6,800 feet ( 1,829 to 2,073 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. ( 8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Wenota and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Wenota soils

Landscape:Valleys
Landform: Flood plains
Parent material: Stream alluvium derived from sandstone and shale
Slope: 1 to 6 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 10.3 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: Occasional
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 4 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: About 3 (slightly sodic)
Ecological site: Clayey Bottomland
Potential native vegetation: western wheatgrass, alkali sacaton, blue grama, fourwing saltbush, galleta, obtuse panicgrass
Land capability subclass (nonirrigated): 6c
Typical Profile:
A-0 to 8 inches; silty clay loam
C-8 to 60 inches; clay

## Minor Components

Scholle and similar soils
Composition: About 8 percent Slope: 1 to 5 percent Drainage class: Well drained Ecological site: Loamy

Silver and similar soils
Composition: About 7 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

# 248-Hagerman-Silver fine sandy loams, 2 to 7 percent slopes 

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,000 to 6,900 feet ( 1,829 to 2,103 meters)
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days

## Map Unit Composition

Hagerman and similar soils: 45 percent
Silver and similar soils: 40 percent
Minor components: 15 percent
Component Descriptions

## Hagerman soils

Landscape: Uplands
Landform: Fan remnants
Parent material: Fan alluvium derived from sandstone and shale
Slope: 2 to 7 percent
Depth class: Moderately deep
Depth to restrictive feature: 20 to 40 inches to bedrock, lithic
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 3.8 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: About 6 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, fourwing saltbush, galleta, sand dropseed
Land capability subclass (nonirrigated): 6c

## Typical Profile:

A-0 to 3 inches; fine sandy loam
Bt and Btk-3 to 24 inches; sandy clay loam
R-24 to 60 inches; bedrock

## Silver soils

Landscape: Uplands
Landform: Fan remnants
Parent material: Fan alluvium derived from sandstone and shale
Slope: 2 to 7 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to 0.2 in/hr (slow)
Available water capacity: About 10.5 inches (high)

Shrink-swell potential: About 7.5 percent (high)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 13 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Loamy
Potential native vegetation: blue grama, western wheatgrass, spike muhly, bottlebrush squirreltail, needlegrass, winterfat
Land capability subclass (nonirrigated): 6c

Typical Profile:
A-0 to 4 inches; fine sandy loam
Bt,Bk,C-4 to 60 inches; clay loam

## Minor Components

Rock outcrop
Composition: About 5 percent Depth to restrictive feature: 0 inches to bedrock, lithic

Penistaja and similar soils
Composition: About 5 percent
Slope: 2 to 8 percent
Drainage class: Well drained
Ecological site: Loamy

Scholle and similar soils
Composition: About 5 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

## 249-Losmarios extremely cobbly sandy clay loam, 10 to 35 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,100 to 6,800 feet (1,859 to 2,073 meters)
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Map Unit Composition
Losmarios and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## Losmarios soils

Landscape: Uplands
Landform: Alluvial fans

Parent material: Fan alluvium derived from sandstone and shale
Slope: 10 to 35 percent
Surface fragments: About 30 percent gravel, about 40 percent cobbles
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: . 06 to $0.2 \mathrm{in} / \mathrm{hr}$ (slow)
Available water capacity: About 8.5 inches (moderate)
Shrink-swell potential: About 7.3 percent (high)
Runoff class: Very high
Calcium carbonate average in horizon of maximum accumulation: About 10 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $3 \mathrm{mmhos} / \mathrm{cm}$ (very slightly saline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Gravelly
Potential native vegetation: blue grama, black grama, New Mexico Feathergrass, common wolfstail, little bluestem, sideoats grama, western wheatgrass, winterfat Land capability subclass (nonirrigated): 6e

## Typical Profile:

A-0 to 6 inches; extremely cobbly sandy clay loam
2Bw-6 to 29 inches; silty clay
2C-29 to 60 inches; silty clay

## Minor Components

Rock outcrop
Composition: About 8 percent
Depth to restrictive feature: 0 inches to bedrock, lithic
Silver and similar soils
Composition: About 7 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

## 302-Puye gravelly sandy loam, 3 to 15 percent slopes

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,300 to 7,200 feet (1,920 to 2,195 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Puye and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

Puye soils
Landscape: Uplands
Landform: Summits, mesas

Parent material: Slope alluvium derived from pumice
Slope: 3 to 15 percent
Surface fragments: About 20 percent gravel
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to duripan
Drainage class: Somewhat excessively drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $2 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Juniperus monosperma-Pinus edulis/Fallugia paradoxa-
Chrysothamnus nauseosus/Bouteloua hirsuta-Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, oneseed juniper, twoneedle pinyon, Apache plume, galleta, needleandthread, sideoats grama
Land capability subclass (nonirrigated): 7s

## Typical Profile:

A-0 to 3 inches; gravelly sandy loam
Bw-3 to 15 inches; gravelly sandy loam
Bqm-15 to 16 inches; cemented material
2Bq and 2C-16 to 60 inches; very gravelly loamy sand

## Minor Components

Chiminet and similar soils
Composition: About 8 percent
Slope: 5 to 40 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

Oelop and similar soils
Composition: About 7 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy

# 401-Chiminet-Rock outcrop association, 5 to 40 percent slopes 

## Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 8,000 feet (2,073 to 2,438 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)

Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.) Frost-free period: 100 to 130 days

Map Unit Composition
Chiminet and similar soils: 60 percent
Rock outcrop: 25 percent
Minor components: 15 percent

## Component Descriptions

## Chiminet soils

Landscape: Uplands, hills
Landform: Mesas, buttes
Parent material: Residuum weathered from tuff
Slope: 5 to 40 percent
Depth class: Shallow
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 1.2 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: blue grama, bottlebrush squirreltail, prairie junegrass, Gambel oak
Land capability subclass (nonirrigated): 7s
Typical Profile:
Oi-O to 1 inches; slightly decomposed plant material
A-1 to 3 inches; sandy loam
C-3 to 10 inches; gravelly sandy loam
Cr-10 to 60 inches; bedrock

## Rock outcrop

Depth to restrictive feature: 0 inches to bedrock, lithic

## Minor Components

Oelop and similar soils
Composition: About 5 percent
Slope: 1 to 5 percent
Drainage class: Well drained
Ecological site: Loamy
Puye and similar soils
Composition: About 5 percent
Slope: 3 to 15 percent

Depth to restrictive feature: 10 to 20 inches to duripan
Drainage class: Somewhat excessively drained
Ecological site: Juniperus monosperma-Pinus edulis/Fallugia paradoxaChrysothamnus nauseosus/Bouteloua hirsuta-Bouteloua gracilis

Totavi and similar soils
Composition: About 5 percent
Slope: 1 to 8 percent
Drainage class: Well drained
Ecological site: Juniperus monosperma-Pinus edulis/Fallugia paradoxa-
Chrysothamnus nauseosus/Bouteloua hirsuta-Bouteloua gracilis

## 407-Totavi gravelly loam, 1 to 8 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 6,800 to 8,000 feet (2,073 to 2,438 meters)
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Map Unit Composition
Totavi and similar soils: 85 percent
Minor components: 15 percent

## Component Descriptions

## Totavi soils

Landscape: Uplands
Landform: Summits mesas
Parent material: Slope alluvium derived from tuff
Slope: 1 to 8 percent
Depth class:Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Juniperus monosperma-Pinus edulis/Fallugia paradoxaChrysothamnus nauseosus/Bouteloua hirsuta-Bouteloua gracilis
Potential native vegetation:
Common trees: oneseed juniper, twoneedle pinyon
Other plants: Piptatherum micranthum, bottlebrush squirreltail, buckwheat, muttongrass, pine dropseed, western yarrow
Land capability subclass (nonirrigated): 3s

## Typical Profile:

Oi-0 to 3 inches; slightly decomposed plant material
A-3 to 6 inches; gravelly loam
Bw-6 to 28 inches; sandy loam
C1 and C2-28 to 60 inches; gravelly sandy loam

## Minor Components

Chiminet and similar soils
Composition: About 8 percent
Slope: 5 to 40 percent
Depth to restrictive feature: 10 to 20 inches to bedrock, paralithic
Drainage class: Well drained
Ecological site: Pinus edulis-Juniperus monosperma/Quercus gambelii/Bouteloua gracilis

Rock outcrop
Composition: About 7 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

## 704—Chrishall gravelly loam, 1 to 15 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 6,400 to 9,000 feet (1,951 to 2,743 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Chrishall and similar soils: 80 percent
Minor components: 20 percent

## Component Descriptions

## Chrishall soils

Landscape:Valleys
Landform: Stream terraces
Parent material: Slope alluvium derived from volcanic rock
Slope: 1 to 15 percent
Surface fragments: About 21 percent gravel
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 5.8 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Runoff class: Low
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation:
None (nonsodic)

Ecological site: Mountain Loam
Potential native vegetation: Arizona fescue, pine dropseed, western wheatgrass,
muhly, needlegrass, bottlebrush squirreltail
Land capability subclass (nonirrigated): 4c
Typical Profile:
A1-0 to 17 inches; gravelly loam
A2,Bw, C-17 to 60 inches; gravelly fine sandy loam

## Minor Components

Calaveras and similar soils
Composition: About 8 percent
Slope: 40 to 80 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica
Palon and similar soils
Composition: About 7 percent
Slope: 40 to 80 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambeliiSymphoricarpos albus/Festuca arizonica-Carex geyeri

Rusbach and similar soils
Composition: About 5 percent
Slope: 40 to 80 percent
Drainage class: Somewhat excessively drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

## 710-Calaveras-Palon very gravelly sandy loams, 40 to 80 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 8,500 to 10,000 feet (2,591 to 3,048 meters)
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Map Unit Composition
Calaveras and similar soils: 50 percent
Palon and similar soils: 30 percent
Minor components: 20 percent
Component Descriptions

## Calaveras soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from tuff
Slope: 40 to 80 percent
Depth class: Very deep

Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica
Potential native vegetation:
Common trees: ponderosa pine, Douglas-fir
Other plants: Arizona fescue, mountain muhly, vaccinium, Gambel oak, brome
Land capability subclass (nonirrigated): 7e

## Typical Profile:

Oi-0 to 3 inches; slightly decomposed plant material
A-3 to 9 inches; very gravelly sandy loam
E,Bt-9 to 60 inches; very cobbly sandy clay loam

## Palon soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from rhyolite
Slope: 40 to 80 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 3.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None
(nonsodic)
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambelii-
Symphoricarpos albus/Festuca arizonica-Carex geyeri
Potential native vegetation:
Common trees: white fir, corkbark fir, Engelmann spruce, quaking aspen, Douglas-fir
Other plants: sedge, mountain muhly, vaccinium, bluegrass
Land capability subclass (nonirrigated): 7e
Typical Profile:
Oi-0 to 1 inches; slightly decomposed plant material
E-1 to 16 inches; very gravelly sandy loam
Bt1-16 to 40 inches; very gravelly loamy sand
Bt2-40 to 60 inches; extremely cobbly sandy loam

Minor Components<br>Alanos and similar soils<br>Composition: About 8 percent<br>Slope: 15 to 50 percent<br>Drainage class: Well drained<br>Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi<br>Chrishall and similar soils<br>Composition: About 7 percent<br>Slope: 1 to 15 percent<br>Drainage class: Well drained<br>Flooding hazard: Occasional<br>Ecological site: Mountain Loam<br>Laventana and similar soils<br>Composition: About 5 percent<br>Slope: 15 to 40 percent<br>Drainage class: Well drained<br>Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica

## 711—Laventana cobbly loam, 15 to 40 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 8,400 to 9,100 feet (2,560 to 2,774 meters)
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Map Unit Composition
Laventana and similar soils: 80 percent
Minor components: 20 percent
Component Descriptions

## Laventana soils

Landscape: Uplands
Landform: Mountains
Parent material: Slope alluvium derived from tuff
Slope: 15 to 40 percent
Surface fragments: About 21 percent cobbles
Depth class:Very deep
Drainage class:Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: High
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica

Potential native vegetation:
Common trees: ponderosa pine, Douglas-fir
Other plants: Arizona fescue, mountain muhly, vaccinium, Gambel oak, brome Land capability subclass (nonirrigated): 6e

Typical Profile:
A1-0 to 5 inches; cobbly loam
A2-5 to 11 inches; cobbly fine sandy loam
E-11 to 23 inches; cobbly sandy clay loam
Bt-23 to 60 inches; extremely stony sandy clay loam

## Minor Components

Alanos and similar soils
Composition: About 8 percent
Slope: 15 to 50 percent
Drainage class: Well drained
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi
Calaveras and similar soils
Composition: About 7 percent
Slope: 40 to 80 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica
Palon and similar soils
Composition: About 5 percent
Slope: 40 to 80 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambelii-
Symphoricarpos albus/Festuca arizonica-Carex geyeri

## 719—Alanos very cobbly loam, 15 to 50 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 7,200 to 8,300 feet (2,195 to 2,530 meters)
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Map Unit Composition

Alanos and similar soils: 80 percent
Minor components: 20 percent
Component Descriptions

## Alanos soils

Landscape: Uplands
Landform: Hills
Parent material: Colluvium derived from volcanic rock
Slope: 15 to 50 percent
Depth class: Very deep
Drainage class: Well drained

Slowest permeability: . 06 to 0.2 in/hr (slow)
Available water capacity: About 4.8 inches (low)
Shrink-swell potential: About 3.7 percent (moderate)
Runoff class: Very high
Calcium carbonate average in horizon of maximum accumulation: About 3 percent
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None
(nonsodic)
Ecological site: Pinus ponderosa/Festuca arizonica-Danthonia parryi
Potential native vegetation:
Common trees: ponderosa pine
Other plants: Arizona fescue, mountain muhly, muttongrass, prairie Junegrass, sedge
Land capability subclass (nonirrigated): 7e

## Typical Profile:

Oi-0 to 1 inches; slightly decomposed plant material
A-1 to 7 inches; very cobbly loam
Bt1-7 to 27 inches; very cobbly clay
Bt2-27 to 39 inches; extremely cobbly sandy clay loam
C-39 to 60 inches; extremely cobbly sandy loam

## Minor Components

Calaveras and similar soils
Composition: About 8 percent
Slope: 40 to 80 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica
Laventana and similar soils
Composition: About 7 percent
Slope: 15 to 40 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Pinus ponderosa/Festuca arizonica

Palon and similar soils
Composition: About 5 percent
Slope: 40 to 80 percent
Drainage class: Well drained
Ecological site: Pseudotsuga menziesii-Abies concolor/Quercus gambeliiSymphoricarpos albus/Festuca arizonica-Carex geyeri

## 802-Redondo gravelly sandy clay loam, 5 to 25 percent slopes

## Map Unit Setting

Major Land Resource Area: 48A
Elevation: 9,400 to 10,800 feet (2,865 to 3,292 meters)
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)

Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.) Frost-free period: 50 to 70 days

## Map Unit Composition

Redondo and similar soils: 85 percent Minor components: 15 percent

## Component Descriptions

## Redondo soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Residuum weathered from tuff
Slope: 5 to 25 percent
Depth class: Very deep
Drainage class: Well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} / \mathrm{hr}$ (moderate)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: About $1 \mathrm{mmhos} / \mathrm{cm}$ (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue , geranium, mountain muhly, strawberry
Land capability subclass (nonirrigated): 6c

## Typical Profile:

Oi-0 to 2 inches; slightly decomposed plant material
A-2 to 5 inches; gravelly sandy clay loam
E-5 to 16 inches; gravelly sandy clay loam
Bt-16 to 60 inches; very cobbly sandy clay loam

## Minor Components

Rock outcrop
Composition: About 10 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Rusbach and similar soils
Composition: About 5 percent
Slope: 40 to 80 percent
Drainage class: Somewhat excessively drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

# 803-Rusbach cobbly sandy loam, 40 to 80 percent slopes 

Map Unit Setting<br>Major Land Resource Area: 48A<br>Elevation: 8,600 to 10,800 feet (2,621 to 3,292 meters)<br>Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)<br>Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)<br>Frost-free period: 50 to 70 days

Map Unit Composition
Rusbach and similar soils: 85 percent
Minor components: 15 percent
Component Descriptions

## Rusbach soils

Landscape: Mountains
Landform: Mountain slopes
Parent material: Colluvium derived from tuff
Slope: 40 to 80 percent
Depth class: Very deep
Drainage class: Somewhat excessively drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} / \mathrm{hr}$ (moderately rapid)
Available water capacity: About 4.0 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Runoff class: Medium
Calcium carbonate average in horizon of maximum accumulation: None
Gypsum average in horizon of maximum accumulation: None
Salinity average in horizon of maximum accumulation: None mmhos/cm (nonsaline)
Sodium adsorption ratio average in horizon of maximum accumulation: None (nonsodic)
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium
Potential native vegetation:
Common trees: corkbark fir, Engelmann spruce
Other plants: vaccinium, Thurber fescue , geranium, mountain muhly, strawberry
Land capability subclass (nonirrigated): 7e
Typical Profile:
Oi-0 to 2 inches; slightly decomposed plant material
E1-2 to 16 inches; cobbly sandy loam
E2-16 to 25 inches; cobbly loamy sand
Bw-25 to 70 inches; very cobbly loamy sand

## Minor Components

Rock outcrop
Composition: About 5 percent
Depth to restrictive feature: 0 inches to bedrock, lithic

Chrishall and similar soils
Composition: About 5 percent
Slope: 1 to 15 percent
Drainage class: Well drained
Flooding hazard: Occasional
Ecological site: Mountain Loam
Redondo and similar soils
Composition: About 5 percent
Slope: 5 to 25 percent
Drainage class: Well drained
Ecological site: Pinus engelmannii-Abies lasiocarpa/Vaccinium

## DAM—Dam

This unit represents the dams that impounds the water that forms the El Vado and Abiquiu reservoir areas.

## W-Water

These areas are covered with water in most years, at least during the period that is warm enough for plants to grow. Many areas are covered thoughout the year. Delineations mapped as water in the survey area are El Vado and Abiquiu reservoirs and Heron Lake.

## 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 forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

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

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

## Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various 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.

## Prime Farmland

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

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

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

The map units in the survey area that are considered prime farmland are listed here. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in Table 4, "Acreage and Proportional Extent of the Soils." 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 would meet the requirements for prime farmland if an adequate and dependable supply of irrigation water were available are:

22 Jocity-Gilco complex, 1 to 3 percent slopes
23 Gilco sandy clay loam, 0 to 3 percent slopes
24 Jocity sandy clay loam, 0 to 1 percent slopes
Sedillo loam, 0 to 3 percent slopes

## Crops and Pasture

By Levi Sandoval, District Conservationist and Edward Romero, Soil Conservationist, Natural Resources Conservation Service

General management needs for crops, hayland and pasture is suggested in this section. The system of land capability classification used by the Natural Resources Conservation Service is explained, and the estimated yields of the main crops, hay and pasture plants commonly grown are listed for each soil. Specific information can be obtained from the local office of the Natural Resources Conservation Service.

About 32,000 acres of irrigated cropland, pastureland, and hayland are in the survey area. The main areas of irrigated land are along the Rio Grande, the Rio Chama, and their tributaries.

Water for most of the irrigated land is delivered by acequias off the Rio Grande and the Rio Chama. Irrigation water is adequate for good crop yields during most years.

The main crops are grass hay, alfalfa, orchards, and small gardens. Good potential exists for increased production of high-value crops such as vegetables and vineyards. Other crops include small grains such as winter wheat, barley, and oats.

About 6,300 acres of non-irrigated cropland is in the survey area, located near Tierra Amarilla and Llaues. Non-irrigated farming is limited by uncertain precipitation and short growing seasons. Major non-irrigated crops consist mainly of winter wheat, barley, and oats.

The survey area is broken into several distinct areas of crop or pasture production. In the northern part of the survey area, production is limited almost exclusively to cool season grass production. A warm season legume, normally strawberry clover, is commonly included in the pastures. Many pastures are grazed and large quantities of hay are produced to provide feed for the long winters.

The central part of the survey area, from Tierra Amarilla to below Abiquiu reservoir, contains very little pasture or cropland.

The southern portion of the survey area is also broken into several areas which vary significantly in the type of irrigated agriculture. North of Espanola along the Rio Grande in the Velarde-Alcalde area, the major crop is alfalfa with significant amounts of sweet corn and chili being produced. Numerous apple orchards are found in the Alcalde-Velarde area with their number decreasing downstream into Espanola. The Dixon-Velarde-Alcalde area has a high water table, the water is normally found three to four feet below the surface, a depth which usually allows crop production.

In the adjacent area along the Rio Chama, in the vicinity of Hernandez, Medanales, and Chili, the number of orchards and cropland areas is greatly reduced. Instead there are many areas of native grass meadows which are regularly cut for hay production. The water table is much higher along the river and there are large areas of sedges. Many of these sedge areas are also cut and baled for hay.

East of Espanola in the Chimayo Valley area chili is the major crop with many apple orchards and alfalfa fields.

The last area of significant crop production is along the Rio Grande. South of Espanola in the San Pedro-Mesilla area, alfalfa is the major crop with scattered orchards. There are many areas of native grass meadows which are grazed. Alfalfa decreases and orchards increase moving up the valley such that orchards predominate in Velarde. From Velarde to the edge of the survey area in the La Cienega-Dixon area, agricultural production is primarily orchards with scattered alfalfa fields.

The major objectives in cropland management are irrigation water management, maintaining soil tilth, fertility, and reduction of wind erosion. Irrigation water management consists of determining and controlling the proper rate, amount, and timing of irrigation water. To achieve proper irrigation water management, it is desirable to have a well designed conservation irrigation system based on the
characteristics of the soil and the crops to be grown. A timely application of water without over-irrigating is essential to obtain high yields and to conserve water. Installing irrigation pipelines, land leveling, or ditch lining should be used in some areas where needed to conserve water, improve efficiency, minimize erosion, and increase productivity.

Several management practices designed to maintain soil tilth, fertility, and reduce soil and water erosion are applicable to all of the cropped soils in the survey area. These include, use of conservation cropping systems, crop residue management, cover crops, and proper fertilization.

## Yields per Acre

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

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

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

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 the table 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, $2 e$. The letter $e$ shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; $w$ shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and $c$, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by $w, s$, or $c$ because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in the section Detailed Soil Map Units and in Table 5.

## Rangeland

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Table 6, Rangeland Productivy, shows, for each soil that supports rangeland vegetation, the ecological site and the potential annual production of vegetation in favorable, normal, and unfavorable years. An explanation of the column headings in Table 6 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 a 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 ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service, or at: http://www.nm.nrcs.usda.gov/technical/fotg/section-2/ESD.html on the Internet.

Total dry-weight production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural 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.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in chapter 4 of the "National Range and Pasture Handbook" (http://www.ftw.nrcs.usda.gov/glti/NRPH.html).

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural 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 range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

## Forest Productivity and Management

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

## Forest Productivity

In Table 7, Forestland Productivity, the potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume number. Only map units and soils that may likely have harvestable trees are shown. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, evenaged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

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

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

## 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.

Table 7 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in Table 7 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.

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

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 erodibilty of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

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.

The trees or shrubs selected for planting in windbreaks should be those that are suited to the soils on the site. Selecting suitable species helps to ensure the survival, rapid growth, and longevity of windbreaks. The soil characteristics that greatly affect the growth rate of trees and shrubs are permeability, available water capacity, and depth to bedrock.

Grazing can be detrimental to windbreaks and environmental plantings because livestock compact the soil and remove the lower branches of the trees and shrubs. Compaction retards growth and removal of the lower branches reduces the effectiveness and esthetic value of the windbreaks. Weeds and insects prevent maximum growth rates. Clean cultivation and applications of herbicide help to control weeds. An insufficient moisture supply hinders the survival of trees in urban areas and on cropland. Drip irrigation or other methods of irrigation are needed to reduce the seedling mortality rate and ensure continued growth. Fallowing a year before planting helps to provide a sufficient soil moisture supply for the establishment of seedlings.

Information on planning windbreaks and screens along with their proper care can be obtained from the local offices of the Natural Resources Conservation Service, the Cooperative Extension Service, or from a commercial nursery.

## Recreation

The soils of the survey area are rated in Tables 8 and 9 according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational 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 tables 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).

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

The information in Tables 8 and 9 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large
stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

## Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

There are six general areas of wildlife habitat in the Rio Arriba Survey Area:
1.) Plateaus, mesas, and terraces
2.) Mountains
3.) River and stream valleys
4.) Wetlands
5.) Breaks
6.) Rock outcrops

Plateaus, mesas, and terraces have soils that have grasslands and pinyon-juniper forests on the gently undulating to steep slopes. Grasses and shrubs grow on soils ranging from very shallow to very deep.

The summits of plateaus and mesas support pinyon-juniper forests. Elevations range from 6,800 to 7,800 feet. A variety of wildlife utilize these area, some of which include gray squirrels, cottontail rabbits, prairie rattlesnakes, and pinyon jays

Fan remnants and stream terraces form old land surfaces near valleys and mountains. These upland sites are home to badger, stripped skunk, prairie dogs, prairie rattlesnakes, black-tailed jackrabbit, and hawks. Antelope could be reintroduced in the northern half of the survey if given protection until established. Badgers and other burrowing animals make extensive use of areas of coarse and moderately coarse textured soils.

Mountains are in the northeastern portion of the survey area north of Bernalillo.
The Jemez Mountains contain some of the most important wildlife habitat in the survey area. Woodlands of ponderosa pine, Douglas-fir, Englemann spruce, pinyon, juniper, and Gambel oak, provide habitat for turkey, mule deer, Elk, black bear, porcupine, cottontail rabbits, gray squirrel, band-tailed pigeons, owls, hawks, prairie rattlesnakes, and songbirds.

Open grassy valleys are home to prairie dogs. The Long tailed weasel also occurs in these areas. Local wetlands are important for many birds, waterfowl, and local mammals. Steep slopes and variable topography also play important roles in wildlife habitat.

River and stream valleys occur along such streams as the Rio Grande, Rio Chama, and Santa Cruz Rivers. They contain riparian vegetation and water for wildlife use. These areas are used by all local wildlife for some part of their needs.

Songbirds nest in cottonwood and willow trees in large numbers. Cavity nesting birds find many nest sites in holes within large cottonwood trees. Quail use the thick vegetation for cover and seed sources. The abundant prey species attract many predators such as coyote, hawks, prairie rattlesnakes, and bobcat. Mule deer may spend their whole lives in these river bottoms.

The potential for competition between livestock and wildlife is high. The plant communities in these riparian areas must be maintained in good condition to provide wildlife habitat, flood protection, water quality, and soil erosion control.

Wetlands are areas of hydrophytic vegetation, hydric soils, and wetland hydrology. Marshes are wetlands dominated by grasses and grass-like plants, and they occur in few areas of the survey area. Some are in channels of the Rio Grande, Puerco, and Jemez River valleys and are produced by ground water. Other small marshes are man-induced and formed by irrigation impoundments.

All of these wetlands are used extensively by a large variety of wildlife species. Predators and prey species alike gather at these oases in an otherwise dry landscape.

Wetlands provide natural protection from flooding, enhance water quality, furnish habitat for wildlife, and conserve water. Wetlands need protection from excessive grazing, drainage projects, and poorly planned urban development.

Breaks are the steep, broken lands below the escarpments of mesas and plateaus. Breaks are very eroded and dissected, with many small ridges and gullies. Vegetation grows on the soils occurring in breaks, but not in large amounts. Although annual production of air-dry vegetation is generally low, plant diversity is high. This botanic diversity along with the physical cover provided by the terrain, provides an attractive habitat for wildlife. Mule deer hide in breaks and feed on browse plants such as true mountainmahogany. Coyote and red fox find cover in the intricate, rocky landscapes. Trees growing on breaks of higher elevation, provide nest sites and hunting perches for raptors such as the red-tailed hawk.

Rock outcrops furnish wildlife habitat where they occur as cliffs below rims of plateaus, mesas, and canyons. Although little or no vegetation grows on rock outcrops, they are still important to many species. Eagles, hawks, turkey vultures, owls, diamondback rattlers, and swallows utilize cliffs and ledges. Migratory bats
seasonally roost in cracks and caves. Foxes, bobcats, bears, and cougars have dens in alcoves and caves.

## 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. Tables 10 and 11 show the degree and kind of soil limitations that
affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. 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 tables indicate the 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 (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.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

## Sanitary Facilities

Tables 12 and 13 show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. 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 tables 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.

A trench sanitary landfill is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an area sanitary landfill, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow
along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

## Construction Materials

Tables 14 and 15 give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. 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 14, 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 topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

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.

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 the table 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 this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, 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).

## Water Management

Table 16 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. 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 tables 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).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

## Soil Properties

Data relating to soil properties are collected during the course of the soil survey.
Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

## Engineering Index Properties

Table 17 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.
Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "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.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional
refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in Table 17.

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.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In Table 18, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In Table 18, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In 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 content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (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 ( 33 kPa or 10 kPa ) 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 refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity $\left(\mathrm{K}_{\text {sat }}\right)$. The estimates in the table indicate the rate of water movement, in micrometers per second (um/sec), when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $1 / 3$ - or ${ }^{1 / 10}$-bar tension ( 33 kPa or 10 kPa 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 six 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 coarse 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.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

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 $(\mathrm{Na})$ 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 $\mathrm{Ca}+$ 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.

## Water Features

Table 20 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Surface runoff is that portion of the precipitation on a drainage area that travels over the ground surface. The overland flow of water is no longer considered runoff when it enters a point of concentrated flow such as a stream channel. Soil properties that strongly affect surface runoff are slope and permeability. The relative amount of runoff is given as negligible, very low, low, medium, high, and very high. Very specific conditions are assumed for estimation of surface runoff: the soil surface is bare and free of irregularities that would retard water flow, the soil is not frozen, the soil is very moist or wet, and the amount of precipitation or snowmelt is about 2 inches and occurs in a 24-hour period.

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 20 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 20 indicates surface water depth and the duration and frequency of ponding. Duration is expressed as very brief if less than 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. None means that ponding is not probable; rare that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); occasional that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and frequent that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and frequency are estimated. Duration is expressed as extremely brief if 0.1 hour to 4 hours, very brief if 4 hours to 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. None means that flooding is not probable; very rare that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); rare that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); occasional that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); frequent that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and very frequent that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Soil Features

Table 21 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A restrictive layer is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as low, moderate, or high, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as low, moderate, or high. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

## Classification of the Soils

Soils are classified so that we can more easily remember significant characteristics. Classification enables us to assemble knowledge about the soils, to see their relationship to one another and to the whole environment, and to develop principles that help us to understand their behavior and their responses to manipulation. Through classification and then the use of soil maps, we can apply our knowledge of soils to specific areas.

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 22 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Argid (Arg, meaning presence of an argillic horizon, plus id, from Aridisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; 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 Haplargids (Hapl, meaning minimal horizonation, plus argid, the suborder of the Aridisols that has an argillic horizon).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic 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 Ustollic identifies the subgroup that is an intergrade to soils that have more organic matter in the surface layer. An example is Ustollic Haplargids.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, mesic Ustollic Haplargids.

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. The Penistaja series is an example of a fine-loamy, mixed, mesic Ustollic Haplargid.

## Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999). Soils in this survey were classified according to the 1987 "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.

## Abiquiu Series

Map units: 18, 42
Depth class: very deep
Drainage class: somewhat poorly drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: flood plains and stream terraces
Parent material: stream alluvium derived from gravelly material and sandstone
Elevation: 5,500 to 6,100 feet (1,676 to 1,859 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Sandy-skeletal, mixed, mesic Typic Ustifluvents

## Typical Pedon

Abiquiu silt loam, in an area of map unit 18, Abiquiu-Peralta complex, 0 to 3 percent slopes; about 0.6 mile north and 0.4 mile east of Abiquiu; New Mexico state plane coordinates 1,898,200 feet north and 482,100 feet east. NAD 83, UTM $13-40$ 08881 N; 0382140 E.

A-0 to 4 inches; brown (10YR 5/3) silt loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, friable, slightly sticky and slightly plastic; common fine roots; many medium discontinuous irregular pores; strongly effervescent; moderately alkaline; abrupt smooth boundary.
C1-4 to 8 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, friable, slightly sticky and slightly plastic; common fine roots; many medium irregular pores; slightly effervescent; moderately alkaline; abrupt wavy boundary.
C2-8 to 15 inches; pale brown (10YR 6/3) extremely gravelly coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; common very fine irregular pores; 60 percent gravel and 15 percent cobbles; slightly effervescent; moderately alkaline; clear wavy boundary.
C3-15 to 36 inches; pale brown (10YR 6/3) extremely cobbly coarse sand, with few strata of fine sandy loam, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few medium irregular pores; 45 percent gravel and

30 percent cobbles; slightly effervescent; moderately alkaline; clear wavy boundary.
C4-36 to 60 inches; pale brown (10YR 6/3) extremely gravelly coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; few medium irregular pores; 60 percent gravel and 15 percent cobbles; slightly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry
Texture, fine earth fraction: silt loam or fine sandy loam
C horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: the upper few inches is fine sandy loam, loamy sand, or sand; and the lower part is coarse sand and sand with thin strata of fine sandy loam, loamy sand, or sand
Rock fragments: 45 to 60 percent gravel and 15 to 30 percent cobbles
Note: A water table may be at a depth of 24 to 48 inches from March through October. Long, occasional flooding occurs from April through June.

## Abreu Series

Map unit: 201
Depth class: deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: mountain slopes
Parent material: colluvium derived from igneous material
Elevation: 8,200 to 9,800 feet (2,499 to 2,987 meters)
Slope: 15 to 60 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Taxonomic class: Loamy-skeletal, mixed Typic Eutroboralfs

## Typical Pedon

Abreu gravelly loam, in an area of map unit 201, Lobat-Abreu gravelly loams, 15 to 60 percent slopes; about 5.3 miles east and 0.8 mile south of Chama, New Mexico; New Mexico state plane coordinates 2,142,980 feet north and 430,360 feet east. NAD 83, UTM 13 - 4083616 N; 0367342 E.

Oe-0 to 2 inches; pine needles
A—2 to 4 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist;
moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; common medium, fine and few very fine roots; few very fine interstitial pores; 15 percent gravel and 5 percent cobbles; moderately acid; abrupt smooth boundary.
E-4 to 15 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; strong fine granular structure; soft, very friable, slightly sticky and slightly plastic; common medium, many fine and few very fine roots; few very fine
interstitial pores; 30 percent gravel and 10 percent cobbles; moderately acid; abrupt wavy boundary.
Bt1-15to 34 inches; light brown (7.5YR 6/4) very gravelly clay loam, brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common medium, fine and very fine roots; common fine and few very fine tubular pores; common moderately thick clay films on faces of peds; 35 percent gravel and 15 percent cobbles; moderately acid; gradual wavy boundary.
Bt2-34 to 58 inches; light brown (7.5YR 6/4) very gravelly clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine and very fine roots; common fine and few very fine tubular pores; few thin clay films on faces of peds; 35 percent gravel and 15 percent cobbles; moderately acid.
R-58 inches; igneous bedrock

## Range in Characteristics

A horizon
Rock fragments: 15 to 25 percent gravel and 5 to 10 percent cobbles

## E horizon:

Value: 6 or 7 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam to sandy loam
Rock fragments: 30 to 55 percent gravel and 0 to 10 percent cobbles
Bt horizon:
Hue: 7.5YR or 10YR
Texture, fine earth fraction: clay loam or sandy clay loam
Rock fragments: 30 to 70 percent gravel and 10 to 15 percent cobbles
R horizon: 40 to 60 inches to igneous bedrock

## Alanos Series

Map unit: 719
Depth class: very deep
Drainage class: well drained
Slowest permeability: 06 to 0.2 in./hr. (slow)
Landform: sideslopes of hills
Parent material: colluvium derived from volcanic material
Elevation: 7,200 to 8,300 feet (2,195 to 2,530 meters)
Slope: 15 to 50 percent
Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Clayey-skeletal, mixed Typic Eutroboralfs
Typical Pedon
Alanos very cobbly loam, in an area of map unit 719, Alanos very cobbly loam, 15 to 50 percent slopes; about 3 miles north and 1.7 miles west of the entrance to Puye Cliffs; New Mexico state plane coordinates 1,824,200 feet north and 496,800 feet east. NAD 83, UTM 13-39 86207 N; 0386329 E.

Oe-0 to 1 inch; pine needles
A-1 to 7 inches; grayish brown (10YR 5/2) very cobbly loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium granular structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine, fine and few medium roots; common very fine and fine vesicular pores; 20 percent gravel and 30 percent cobbles; neutral; clear smooth boundary.
Bt1-7 to 27 inches; brown (7.5YR 4/4) very cobbly clay, dark brown (7.5YR 3/4) moist; strong medium subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine, medium and few coarse roots; few fine interstitial pores; many moderately thick and thick clay films on faces of peds; 15 percent gravel and 20 percent cobbles; neutral; clear wavy boundary.
Bt2-27 to 39 inches; reddish yellow (7.5YR 6/6) extremely cobbly sandy clay loam, strong brown (7.5YR 4/6) moist; moderate medium and coarse subangular blocky structure, extremely hard, firm, moderately sticky and moderately plastic; few very fine, fine, medium and coarse roots; few very fine tubular pores; common moderately thick clay films on faces of peds; 30 percent gravel, 30 percent cobbles and 5 percent stones; slightly effervescent; slightly alkaline; clear wavy boundary.
C—39 to 60 inches; very pale brown (10YR 7/4) extremely cobbly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, slightly sticky and nonplastic; few very fine and fine vesicular pores; 30 percent gravel, 30 percent cobbles and 10 percent stones; slightly effervescent; slightly alkaline.

## Range in Characteristics

A horizon:
Rock fragments: 15 to 25 percent gravel and 25 to 35 percent cobbles
Bt horizon:
Rock fragments: 15 to 30 percent gravel, 20 to 30 percent cobbles, and 0 to 5 percent stones

## C horizon:

Rock fragments: 25 to 30 percent gravel, 30 to 35 percent cobbles, and 5 to 10 percent stones

## Alcalde Series

Map unit: 34
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 001 to . 06 in./hr. (very slow)
Landform: stream terraces
Parent material: stream alluvium derived from shale
Elevation: 5,500 to 6,100 feet ( 1,676 to 1,859 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Fine, mixed, calcareous, mesic Vertic Torriorthents

## Typical Pedon

Alcalde clay, in an area of map unit 34, Alcalde clay, 0 to 3 percent slopes; about 0.1 mile due south of the drive-in theater, Espanola, New Mexico; New Mexico state
plane coordinates 1,825,400 feet north and 554,000 feet east. NAD 83, UTM 13 - 39 86349 N; 0403764 E.

A—0 to 3 inches; brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; strong fine granular structure; hard, firm, very sticky and very plastic; common fine and medium roots; common fine discontinuous irregular pores; strongly effervescent; strongly alkaline; abrupt smooth boundary.
Bk1—3 to 13 inches; brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; massive; very hard, very firm, very sticky and very plastic; common very fine and fine roots; few fine irregular pores; strongly effervescent; few fine masses of calcium carbonate; strongly alkaline; gradual wavy boundary.
Bk2—13 to 32 inches; brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; massive; very hard, very firm, very sticky and very plastic; common very fine and fine roots; few fine irregular pores; strongly effervescent; few fine masses of calcium carbonate; strongly alkaline; gradual wavy boundary.
Bk3- 32 to 60 inches; brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; massive; very hard, very firm, very sticky and very plastic; common very fine and few fine roots; few fine irregular pores; violently effervescent; few fine masses of calcium carbonate; strongly alkaline.

Range in Characteristics
Salinity: EC ranges from 8 to 16 mmhos/cm

## A horizon:

Hue: 7.5YR or 5YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Bk horizon:
Hue: 7.5 YR or 5YR
Value: 4 to 6 dry, 3 or 4 moist
Chroma: 3 or 4
Sodicity: SAR ranges from 8 to 16

## Amal Series

Map unit: 106
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} . / \mathrm{hr}$. (moderately slow)
Landform: plateaus
Parent material: eolian material and slope alluvium derived from shale
Elevation: 7,400 to 7,600 feet (2,256 to 2,316 meters)
Slope: 2 to 8 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-silty, mixed, mesic Aridic Haplustalfs

## Typical Pedon

Amal silt loam, in an area of map unit 106, Amal silt loam, 2 to 8 percent slopes, 8 miles south of Cebolla, south of the Berryman Ranch Headquarters, New Mexico; 1,100 feet east and 100 feet north from the southwest corner of Sec. 3, T.25N, R.4E.

A—0 to 4 inches; yellowish brown (10YR 5/4) silt loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common fine tubular pores; neutral; clear smooth boundary.
Bt1-4 to 13 inches; brown (7.5YR 4/4) silty clay loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine, fine and few medium roots; common fine tubular pores; few fine clay films on faces of peds; neutral; clear smooth boundary.
Bt2-13 to 25 inches; brown (7.5YR 4/4) clay loam, dark brown (7.5YR 3/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, firm, very sticky and very plastic; few very fine, fine and medium roots; few fine tubular pores; common moderately thick clay films on faces of peds; neutral; gradual smooth boundary.
Bt3-25 to 32 inches; brown (7.5YR 4/4) clay loam, dark brown (7.5YR 3/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, firm, sticky and, moderately sticky plastic;and moderately plastic; few fine and medium roots; few fine tubular pores; many moderately thick clay films on faces of peds; neutral; clear smooth boundary.
Bt4-32 to 43 inches; strong brown (7.5YR 5/6) clay loam, strong brown (7.5YR 4/6) moist; weak medium subangular blocky structure; very hard, firm, very sticky and very plastic; few very fine roots; few very fine vesicular pores; common moderately thick clay films on faces of peds; slightly effervescent; slightly alkaline; clear smooth boundary.
$2 B k-43$ to 60 inches; very pale brown (10YR 8/4) silty clay loam, yellow (10YR 7/6) moist; massive; very hard, firm, moderately sticky and moderately plastic; few very fine roots; few very fine vesicular pores; violently effervescent; calcium carbonate segregated as common masses; moderately alkaline.

## Range in Characteristics

## A horizon:

Value: 5 or 6 dry, 3 or 4 moist
Chroma: 3 or 4.
Bt horizon:
Hue: 5YR or 7.5 YR
Value: 3 to 5 dry, 3 or 4 moist
Chroma: 4 to 6.
Bk horizon:
Value: 7 or 8 dry, 6 or 7 moist
Chroma: 4 to 6
Note: Depth to the calcic horizon ranges from 40 inches to more than 60 inches.

## Angostura Series

Map units: 206, 211, 216
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in ./hr. (moderately slow)
Landform: mountain slopes
Parent material: slope alluvium and colluvium derived from mixed igneous material
Elevation: 9,200 to 11,000 feet ( 2,804 to 3,353 meters)
Slope: 15 to 45 percent

## Climatic data:

Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Loamy-skeletal, mixed Typic Cryoboralfs

## Typical Pedon

Angostura very cobbly sandy loam, in an area of map unit 216, Angostura very cobbly sandy loam, 15 to 45 percent slopes; located on East Gavilan Canyon, across from the headwater spring of Rio de la Tierra Amarilla; New Mexico state plane coordinates 2,062,200 feet north and 475,000 feet east. NAD 83, UTM 13 - 4058 820 N; 0380624 E.

A-0 to 4 inches; grayish brown (10YR 5/2) very cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and common fine roots; few very fine vesicular pores; 20 percent gravel, 20 percent cobbles and 10 percent stones; neutral; abrupt smooth boundary.
E-4 to 12 inches; pinkish gray (7.5YR 6/2) very cobbly sandy loam, brown (7.5YR $5 / 2$ ) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine and few medium roots; few very fine vesicular pores; 25 percent gravel, 30 percent cobbles and 10 percent stones; neutral; abrupt smooth boundary.
Bt1—12 to 27 inches; strong brown (7.5YR 5/6) extremely gravelly sandy clay loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; hard, friable, moderately sticky and moderately plastic; many very fine, common fine and medium roots; few very fine tubular pores; few moderately thick clay films on faces of peds; 45 percent gravel, 20 percent cobbles and 10 percent stones; neutral; clear smooth boundary.
Bt2—27 to 45 inches; strong brown (7.5YR 5/6) extremely gravelly sandy clay loam, dark brown (10YR 4/4) moist; weak fine subangular blocky structure; hard, friable, moderately sticky and moderately plastic; many very fine, few fine and medium roots; few very fine tubular pores; few moderately thick clay films on faces of peds; 45 percent gravel, 20 percent cobbles and 10 percent stones; neutral; clear smooth boundary.
C-45 to 60 inches; strong brown (7.5YR 5/6) extremely gravelly sandy clay loam, dark brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine vesicular pores; 45 percent gravel, 20 percent cobbles and 10 percent stones; neutral.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 3 to 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: loam or sandy loam
Rock fragments: 15 to 20 percent gravel, 10 to 25 percent cobbles, and 0 to 10 percent stones

E horizon:
Chroma: 2 to 4
Texture, fine earth fraction: loam or sandy loam
Rock fragments: 25 to 30 percent gravel, 25 to 30 percent cobbles, and 10 to 15 percent stones

Bt horizon:
Value: 5 or 6 dry, 4 or 5 moist
Texture, fine earth fraction: clay loam or sandy clay loam
Rock fragments: 40 to 50 percent gravel, 15 to 20 percent cobbles, and 5 to 10 percent stones

## Berryman Series

Map unit: 107
Depth class: very deep
Drainage class: well drained
Slowest permeability: .06 to 0.2 in ./hr. (slow)
Landform: alluvial fans
Parent material: fan alluvium derived from limestone and shale
Elevation: 7,400 to 7,600 feet (2,256 to 2,316 meters)
Slope: 3 to 8 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, carbonatic, mesic Aridic Ustochrepts

## Typical Pedon

Berryman silt loam, in an area of map unit 107, Berryman-Ruson association, 1 to 8 percent slopes; about 2.9 miles south and 0.3 mile west of junction of NM Highway 115 and U.S. Highway $84 ; 2,400$ feet south, and 2,400 feet east of the northwest corner of Sec. 34, T. 26 N., R.4E.

A-0 to 3 inches; light brownish gray (2.5Y 6/2) silt loam, light olive brown (2.5Y 5/4) moist; weak fine granular structure; soft, very friable, moderately sticky and moderately plastic; common very fine and fine roots; common fine vesicular pores; violently effervescent; moderately alkaline; clear smooth boundary.
Bw-3 to 16 inches; light brownish gray ( $2.5 \mathrm{Y} 6 / 2$ ) silty clay loam, dark grayish brown (2.5Y 4/2) moist; moderate fine subangular blocky structure; hard, firm; sticky and moderately plastic; common very fine and fine roots; common fine vesicular pores; violently effervescent; moderately alkaline; clear smooth boundary.
Bk-16 to 80 inches; light brownish gray ( $2.5 \mathrm{Y} 6 / 2$ ) silty clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; violently effervescent; many fine masses of calcium carbonate; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 4
Bw horizon:
Value: 5 to 7 dry, 4 or 5 moist
Chroma: 2 to 4
Bk horizon:
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 2 to 4
Note: The calcium carbonate equivalent ranges from 40 to 55 percent in the profile.

## Bracos Series

Map unit: 210
Depth class: moderately deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: mountain slopes
Parent material: slope alluvium and colluvium derived from igneous material
Elevation: 8,500 to 9,900 feet (2,591 to 3,018 meters)
Slope: 40 to 80 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Loamy-skeletal, mixed, nonacid Typic Cryorthents

## Typical Pedon

Bracos very stony loam, in an area of map unit 210, Rock outcrop-Bracos complex, 40 to 80 percent slopes; about 2.1 miles east and 0.3 miles north of Corkens Lodge, New Mexico; New Mexico state plane coordinates 470,171 feet east and 2,097,402 feet north. NAD 83, UTM 13 - 4069567 N; 0379293 E.

Oi-0 to 3 inches; pine needles
A-3 to 8 inches; dark grayish brown (10YR 4/2) very stony loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine, common medium and very fine roots; few fine vesicular pores; 15 percent cobbles and 35 percent stones; moderately acid; clear wavy boundary.
C1-8 to 21 inches; pale brown (10YR 6/3) very stony loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine and medium roots; few fine and very fine vesicular pores; 10 percent gravel, 15 percent cobbles and 35 percent stones; strongly acid; clear wavy boundary.
C2-21 to 29 inches; light brown (7.5YR 6/4) extremely stony sandy loam, brown (7.5YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; 20 percent gravel, 10 percent cobbles and 45 percent stones; strongly acid; abrupt wavy boundary.
R-29 inches; granite.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry
Texture, fine earth fraction: loam
Rock fragments: 0 to 20 percent gravel, 15 to 35 percent cobbles, and 15 to 35 percent stones

C horizon:
Hue: 10YR or 7.5YR
Value: 5 or 6 dry, 5 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam or sandy loam
Rock fragments: 10 to 20 percent gravel, 10 to 20 percent cobbles, and 35 to 45 percent stones

Notes: The reaction is moderately acid or strongly acid; and the depth to bedrock ranges from 20 to 40 inches.

## Brycan Series

Map unit: 228
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: stream terraces
Parent material: stream alluvium derived from sandstone and shale
Elevation: 6,900 to 7,400 feet (2,103 to 2,256 meters)
Slope: 1 to 3 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine-loamy, mixed Cumulic Haploborolls
Typical Pedon
Brycan loam, in an area of map unit 228, Suposo-Brycan complex, 1 to 6 percent slopes; 5.6 miles southeast of Monero, New Mexico; New Mexico state plane coordinates 2,122,967 feet north and 337,344 feet east. NAD 83, UTM $13-4077$ 888 N; 0338915 E.

A1-0 to 3 inches; dark brown (10YR 3/3) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many fine and very fine interstitial pores; neutral; clear smooth boundary.
A2—3 to 10 inches; dark brown (10YR 3/3) loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to moderate medium granular; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine and very fine tubular pores; neutral; clear smooth boundary.
Bw-10 to 30 inches; dark brown (10YR 3/3) clay loam, very dark grayish brown (10YR $3 / 2$ ) moist; weak medium subangular blocky structure; soft, very friable, moderately sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; slightly alkaline; gradual smooth boundary.
C-30 to 60 inches; brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; massive; soft, very friable, moderately sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry
Bw horizon:
Value: 3 to 5 dry, 3 or 4 moist
Chroma: 2 or 3
C horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4

## Bywell Series

Map unit: 209
Depth class: very deep
Drainage class: poorly drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Landform: stream terraces
Parent material: stream alluvium derived from igneous material
Elevation: 9,700 to 10,400 feet ( 2,957 to 3,170 meters)
Slope: 0 to 2 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Loamy-skeletal, mixed Typic Cryaquolls

## Typical Pedon

Bywell silt loam, in an area of map unit 209, Crubas-Bywell-Croftshaw complex, 0 to 15 percent slopes; about 11.8 miles east and 2.7 miles south of Chama, New Mexico; New Mexico state plane coordinates 2,134,230 feet north and 466,740 feet east. NAD 83, UTM 13 - 4080804 N; 0378394 E.

A1—0 to 4 inches; brown (10YR $5 / 3$ ) silt loam, dark brown (10YR $3 / 3$ ) moist; common fine distinct yellowish brown (10YR 5/8) mottles; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots; many fine interstitial pores; moderately acid; abrupt smooth boundary.
A2—4 to 11 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR $3 / 2$ ) moist; common fine distinct yellowish brown (10YR 5/8) mottles; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots; many fine tubular pores; 10 percent gravel; slightly acid; abrupt smooth boundary.
2C1-11 to 25 inches; light yellowish brown (10YR 6/4) very cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; common medium distinct yellowish brown (10YR 5/8) mottles; massive; soft, friable, slightly sticky and slightly plastic; common fine and very fine roots; common fine vesicular pores; 30 percent gravel and 25 percent cobbles; neutral; gradual smooth boundary.
2C2—25 to 30 inches; yellowish brown (10YR 5/4) very cobbly sandy loam, dark yellowish brown (10YR 3/4) moist; many medium distinct yellowish brown (10YR 5/8) mottles; massive; soft, friable, nonsticky and nonplastic; few very fine roots; few very fine vesicular pores; 20 percent gravel and 20 percent cobbles; neutral; abrupt smooth boundary.
2Cg1-30 to 42 inches; gray (10YR 5/1) very cobbly coarse sandy loam, dark gray (10YR 4/1) moist; many medium distinct yellowish brown (10YR 5/8) mottles; massive; soft, friable, nonsticky and nonplastic; 15 percent gravel and 20 percent cobbles; neutral; abrupt smooth boundary.
$3 \mathrm{Cg} 2-42$ to 60 inches; gray (10YR 6/1) rounded gravel and cobbles.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 2 or 3
Rock fragments: 0 to 10 percent gravel and 20 to 35 percent cobbles

2C horizon:
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy loam or coarse sandy loam

## 2Cg horizon:

Hue: 10YR or 2.5Y
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 1 or 2
Texture, fine earth fraction: sandy loam or coarse sandy loam
Notes: The reaction is neutral to moderately acid.
A water table may be present at the soil surface to a depth of 30 inches.
Rock fragments in the profile range from 35 to 55 percent cobbles and gravel.
The particle-size control section contains 10 to 18 percent clay.

## Calaveras Series

Map unit: 710
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: mountain slopes
Parent material: colluvium derived from tuff
Elevation: 8,500 to 10,000 feet (2,591 to 3,048 meters)
Slope: 40 to 80 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Taxonomic class: Loamy-skeletal, mixed, frigid Dystric Eutrochrepts

## Typical Pedon

Calaveras very gravelly sandy loam, in an area of map unit 710, Calaveras-Palon very gravelly sandy loams, 40 to 80 percent slopes; about 2 miles north and 3.5 miles west of the entrance to Puye Cliffs; New Mexico state plane coordinates 1,818,800 feet north and 487,100 feet east. NAD 83, UTM 13 - 3984599 N; 0383352 E.
$\mathrm{Oi}-0$ to 3 inches; fir needles
A-3 to 9 inches; light gray (10YR 7/2) very gravelly sandy loam, brown (7.5YR 4/2) moist; moderate fine granular structure; soft, friable, slightly sticky and nonplastic; common fine, and medium roots; many very fine and fine vesicular pores; 40 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
E1-9 to 25 inches; light gray (10YR 7/2) very cobbly sandy clay loam, brown (7.5YR 4/2) moist; weak fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine, common very fine and medium roots; many very fine and fine vesicular pores; 30 percent gravel, 20 percent cobbles and 10 percent stones; neutral; clear smooth boundary.
E2-25 to 38 inches; light gray (10YR 7/2) very cobbly sandy clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and slightly plastic; common very fine, fine, medium and few coarse roots; many very fine and few fine vesicular, and few very fine tubular pores; 30 percent gravel, 20 percent cobbles and 10 percent stones; neutral; clear wavy boundary.

Bt-38 to 60 inches; pale brown (10YR 6/3) extremely cobbly sandy clay loam, brown (7.5YR 4/4) moist; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky and slightly plastic; few very fine, fine, medium and coarse roots; common very fine tubular and vesicular pores; clay bridging between sand grains; 25 percent gravel, 30 percent cobbles and 10 percent stones; neutral.

Range in Characteristics
A horizon:
Value: 6 or 7 dry, 4 or 5 moist
Chroma: 1 to 3
Rock fragments: 40 to 50 percent gravel and 5 to 10 percent cobbles
E horizon:
Value: 6 to 8 dry, 4 to 6 moist
Chroma: 1 to 4
Reaction: neutral or slightly acid
Rock fragments: 30 to 35 percent gravel, 20 to 40 percent cobbles, and 10 to 15 percent stones

Bt horizon:
Hue: 10YR or 7.5YR
Value: 5 to 7 dry, 4 or 5 moist
Chroma: 2 to 4
Reaction: neutral or slightly acid
Rock fragments: 25 to 30 percent gravel, 30 to 35 percent cobbles, and 10 to 15 percent stones

## Calendar Series

Map unit: 109
Depth class: moderately deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: hills
Parent material: slope alluvium derived from shale
Elevation: 7,200 to 7,700 feet ( 2,195 to 2,347 meters)
Slope: 5 to 35 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine, mixed, mesic Aridic Ustochrepts

## Typical Pedon

Calendar gravelly loam, in an area of map unit 109; Calendar gravelly loam, 5 to 35 percent slopes; about 1 mile south of Nutrias, New Mexico; southeast corner of Section 16, T.27N., R.4E.; New Mexico state plane coordinates 2,029,800 feet north and 420,200 feet east. NAD 83, UTM 13 - 4049164 N; 0363796 E.

A-0 to 2 inches; brown (10YR 4/3) gravelly loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common fine interstitial pores; 25 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

2Bw—2 to 17 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; moderate medium subangular blocky structure; very hard, firm, sticky, plastic; few very fine roots; few fine interstitial pores; strongly effervescent; moderately alkaline; clear smooth boundary.
2Bk—17 to 35 inches; very pale brown (10YR 7/3) clay, pale brown (10YR 6/3) moist; massive; very hard, firm, sticky, plastic; few very fine roots; few fine tubular pores; strongly effervescent; few fine masses of calcium carbonate; moderately alkaline; abrupt smooth boundary.
3 Cr -35 inches; weathered shale.

## Range in Characteristics

A horizon:
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 2 or 3
Rock fragments: 15 to 30 percent gravel
2Bw horizon:
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 2 to 4
2Bk horizon:
Value: 6 to 8 dry, 4 to 6 moist
Chroma: 2 to 4
Depth to a paralithic contact: 20 to 40 inches
Note: The surface is covered with 25 to 35 percent gravel.

## Capillo Series

Map units: 54, 141
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: breaks and stream terraces
Parent material: fan and stream alluvium derived from sandstone and shale
Elevation: 7,000 to 8,500 feet ( 2,134 to 2,591 meters)
Slope: 0 to 10 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed Typic Argiborolls

## Typical Pedon

Capillo loam, in an area of map unit 141, Capillo-Carjo-Vamer complex, 3 to 25 percent slopes; 5.4 miles southeast of Monero, New Mexico; New Mexico state plane coordinates 2,125,311 feet north and 340,000 feet east. NAD 83, UTM 13-40 78 591 N; 0339734 E.

A—0 to 4 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and moderately plastic; common very fine and fine roots; common very fine tubular pores; neutral; clear smooth boundary.
BA-4 to 8 inches; dark grayish brown (10YR 4/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable; sticky
and moderately plastic; few very fine and fine roots; few very fine tubular pores; neutral; clear smooth boundary.
Bt1-8 to 16 inches; yellowish brown (10YR 5/4) clay, dark brown (10YR 3/3) moist; moderate fine subangular structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine vesicular pores; few thin clay film on faces of peds; neutral; clear smooth boundary.
Bt2—16 to 19 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular pores; common medium clay films on faces of peds; neutral; clear smooth boundary.
Bt3—19 to 24 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular pores; few medium clay films on faces of peds; neutral; gradual smooth boundary.
C-24 to 60 inches; brownish yellow (10YR 6/6) clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, moderately sticky and moderately plastic; slightly alkaline.

## Range in Characteristics

A horizon
Value: 4 or 5 dry and 2 or 3 moist
Texture, fine earth fraction: loam or silt loam
BA horizon
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture, fine earth fraction: silt loam or loam
Bt horizon:
Value: 4 to 6 when dry, 3 to 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay or silty clay loam
C horizon:
Hue: 7.5YR or 10YR
Value: 5 or 6 dry, 4 or 5 moist
Texture, fine earth fraction: clay or clay loam

## Carjo Series

Map units: 132, 141
Depth class: moderately deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: breaks, hills and ridges
Parent material: slope alluvium and colluvium derived from sandstone and shale
Elevation: 7,000 to 8,300 feet ( 2,134 to 2,530 meters)
Slope: 3 to 20 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed Mollic Eutroboralfs

## Typical Pedon

Carjo very flaggy loam, in an area of map unit 132, Stout-Rock outcrop-Carjo complex, 5 to 20 percent slopes; about 8 miles west of Los Ojos on Oilwell Mesa, New Mexico; New Mexico state plane coordinates 2,083,954 feet north and 363,906 feet east. NAD 83, UTM 13 - 4065892 N; 0346855 E.
A-0 to 5 inches; very dark grayish brown (10YR 3/2) very flaggy loam, very dark gray (10YR 3/1) moist; weak coarse subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common fine interstitial pores; 10 percent sandstone channers, 25 percent flagstones; neutral; abrupt smooth boundary.
E—5 to 10 inches; pale brown (10YR 6/3) flaggy clay loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; hard, friable, moderately sticky and slightly plastic; common very fine, fine, and medium roots; common fine and very fine interstitial pores; 5 percent sandstone channers and 15 percent flagstones; neutral; clear wavy boundary.
Bt1-10 to 13 inches; dark brown (10YR 3/3) clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine, common fine and medium roots; few fine tubular pores; few moderately thick clay films on faces of peds; 5 percent sandstone channers; neutral; abrupt smooth boundary.
Bt2—13 to 23 inches; brown (7.5YR 4/4) clay loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; very hard, very firm, very sticky and very plastic; common very fine, fine and few medium roots; few fine tubular pores; many thick clay films on faces of peds; 5 percent sandstone channers; neutral; clear wavy boundary.
Bt3-23 to 38 inches; strong brown (7.5YR 4/6) clay, strong brown (7.5YR 4/6) moist; strong coarse subangular blocky structure; very hard, very firm, very sticky and very plastic; few fine, medium and coarse roots; few fine tubular pores; many thick clay films on faces of peds; neutral.
2R-38 inches; sandstone bedrock.

## Range in Characteristics

A horizon:
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 4
Rock fragments: 10 to 15 percent channers and 5 to 35 percent flagstones
E horizon (when present):
Rock fragments: 0 to 5 percent channers and 10 to 30 percent flagstones
Bt horizon:
Hue: 10YR or 7.5YR
Value: 3 to 6 dry, 2 to 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: clay loam or clay
Rock fragments: 0 to 10 percent channers
Note: Soil depth ranges from 20 to 40 inches to sandstone or shale bedrock.

## Carrick Series

Map unit: 133
Depth class: very deep
Drainage class: well drained

Slowest permeability: . 06 to 0.2 in./hr. (slow)

## Landform: stream terraces

Parent material: eolian material and stream alluvium derived from volcanic material Elevation: 7,200 to 7,600 feet (2,195 to 2,316 meters)
Slope: 1 to 4 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days

## Taxonomic class: Fine, mixed Typic Eutroboralfs

## Typical Pedon

Carrick silt loam, in an area of map unit 133, Carrick silt loam, 1 to 4 percent slopes; about 0.5 mile west and 1.5 miles north of Tierra Amarilla, New Mexico; New Mexico state plane coordinates 2,083,530 feet north and 413,480 feet east. NAD 83, UTM 13 - 4065565 N; 0361961 E.

A—0 to 3 inches; strong brown (7.5YR 5/6) silt loam, brown (7.5YR 4/4) moist; moderate fine granular structure; soft, very friable, moderately sticky and moderately plastic; few medium and coarse and common very fine roots; many fine interstitial pores; slightly alkaline; abrupt smooth boundary.
Bt1—3 to 9 inches; brown (7.5YR 5/4) silty clay loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; very hard, very firm, moderately sticky and moderately plastic; few medium, many fine and common very fine roots; few fine tubular pores; few thin clay films on faces of peds; neutral; abrupt wavy boundary.
Bt2—9 to 21 inches; brown (7.5YR 5/4) silty clay, brown (7.5YR 4/4) moist; strong medium and coarse subangular blocky structure; very hard, very firm, moderately sticky and very plastic; few medium, common fine and very fine roots; few fine tubular pores; few thin clay films on faces of peds; neutral; clear wavy boundary.
Bt3—21 to 38 inches; brown (7.5YR 5/4) silty clay, brown (7.5YR 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, very firm, oderately sticky and moderately plastic; few medium, common fine and very fine roots; few fine tubular pores; many moderately thick clay films on faces of peds; neutral; gradual wavy boundary.
Bt4-38 to 60 inches; strong brown (7.5YR 5/6) silty clay, strong brown (7.5YR 4/6) moist; moderate coarse subangular blocky structure; very hard, very firm, moderately sticky and moderately plastic; common fine and very fine roots; few fine tubular pores; common thin clay films on faces of peds; neutral.

## Range in Characteristics

Reaction: neutral to slightly alkaline

## A horizon:

Value: 4 or 5 dry, 3 or 4 moist
Chroma: 4 to 6
Bt horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: silty clay loam or silty clay

## Chamita Series

Map units: 117, 118
Depth class: very deep
Drainage class: poorly drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: flood plains
Parent material: stream alluvium derived from mixed sources
Elevation: 7,800 to 8,700 feet (2,377 to 2,652 meters)
Slope: 0 to 2 percent
Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine-loamy, mixed, frigid Cumulic Haplaquolls

## Typical Pedon

Chamita loam, in an area of map unit 117, Chamita loam, 0 to 2 percent slopes; about 3 miles north and 2.5 miles west of Chama, New Mexico; New Mexico state plane coordinates 2,166,920 feet north and 387,860 feet east. NAD 83, UTM 13 - 40 91081 N; 0354486 E.

A1-0 to 7 inches; dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; strong medium granular structure; slightly hard, friable, slightly sticky and moderately plastic; many very fine and fine roots; many fine interstitial pores; neutral; clear smooth boundary.
A2—7 to 16 inches; dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; few medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; hard, friable, slightly sticky and moderately plastic; many very fine, fine and few medium roots; many fine interstitial pores; neutral; clear smooth boundary.
A3-16 to 25 inches; dark grayish brown (10YR 4/2) loam, black (10YR 2/1) moist; few medium distinct yellowish brown (10YR $5 / 8$ ) mottles; moderate fine subangular blocky structure; hard, friable, slightly sticky and moderately plastic; common very fine, fine and few medium roots; common fine tubular pores; neutral; clear smooth boundary.
Cg1-25 to 36 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; many medium and large distinct yellowish brown (10YR 5/8) mottles; massive; slightly hard, firm, moderately sticky and moderately plastic; few very fine and medium roots; few fine tubular pores; neutral; clear smooth boundary.
Cg2-36 to 55 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; common large distinct strong brown (7.5YR 5/8) mottles; massive; hard, firm, moderately sticky and moderately plastic; few very fine and medium roots; few fine tubular pores; neutral; abrupt smooth boundary.
Cg3—55 to 60 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; few fine faint yellowish brown (10YR 5/8) mottles; massive; slightly hard, friable, slightly sticky and moderately plastic; 30 percent fine gravel; neutral.

## Range in Characteristics

A horizon:
Value: 5 or 4 dry
Chroma: 1 or 2
Texture, fine earth fraction: loam or clay loam
Cg horizon:
Value: 4 or 6 dry, 2 to 4 moist
Chroma: 2 or 3
Texture, fine earth fraction: loam, sandy loam, or clay loam
Rock fragments: 0 to 35 percent gravel
Note: A water table may occur within 1 to 3 feet of the surface.

## Chimayo Series

Map unit: 147
Depth class: shallow
Drainage class: well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} . / \mathrm{hr}$. (moderately rapid)
Landform: sideslopes of hills
Parent material: slope alluvium derived from mixed sources
Elevation: 6,600 to 7,800 feet (2,012 to 2,377 meters)
Slope: 20 to 50 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy-skeletal, mixed, nonacid, mesic Lithic Ustorthents

## Typical Pedon

Chimayo very gravelly sandy loam, in an area of map unit 147, Dermala-Chimayo complex, 20 to 50 percent slopes; about 2 miles north and 0.6 miles west of Ojo Caliente, New Mexico on the north side of Canada Pueblo, east of Cerro Colorado; 1,400 feet west and 1,100 feet south of the northeast corner of Section 11, T.24N, R.8E.

A-0 to 3 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial pores; 55 percent gravel; neutral; abrupt smooth boundary.
C-3 to 13 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular pores; 35 percent gravel, slightly alkaline; abrupt smooth boundary.
R-13 inches; sandstone bedrock.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Rock fragments: 40 to 55 percent gravel

C horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Rock fragments: 20 to 40 percent gravel
Depth to bedrock: 10 to 20 inches

## Chiminet Series

Map unit: 401
Depth class: shallow
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in ./hr. (moderately rapid)
Landform: sideslopes of buttes and summits of mesas
Parent material: residuum derived from tuff
Elevation: 6,800 to 8,000 feet (2,073 to 2,438 meters)
Slope: 5 to 40 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy, mixed, nonacid, mesic, shallow Typic Ustorthents

## Typical Pedon

Chiminet sandy loam, in an area of map unit 401, Chiminet-Rock outcrop association, 5 to 40 percent slopes; about 1 mile west and 0.2 mile south of Puye cliff dwellings; New Mexico state plane coordinates 1,810,200 feet north and 495,000 feet east. NAD 83, UTM 13 - 3981947 N; 0385726 E.

Oi-0 to 1 inch; pine needles
A-1 inch to 3 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and common fine vesicular pores; 5 percent gravel; neutral; abrupt smooth boundary.
C-3 to 10 inches; light brownish gray (10YR 6/2) gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common very fine and fine, few medium and coarse roots; few fine tubular pores; 25 percent gravel and 5 percent cobbles; slightly acid; clear broken boundary.
Cr -10 inches; soft tuff

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
Reaction: neutral or slightly alkaline
Rock fragments: 0 to 15 percent gravel
C horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
Reaction: neutral to slightly acid
Rock fragments: 20 to 30 percent gravel and 0 to 5 percent cobbles

## Chita Series

Map unit: 148
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: summits of mesas
Parent material: eolian material and slope alluvium derived from sandstone and igneous material
Elevation: 6,000 to 7,000 feet ( 1,829 to 2,134 meters)
Slope: 0 to 5 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters) Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.) Frost-free period: 100 to 130 days

Taxonomic class: Fine-silty, mixed, mesic Aridic Haplustalfs

## Typical Pedon

Chita loam, in an area of map unit 148, Chita loam, 0 to 5 percent slopes; about 0.7 miles north and 1.7 miles west of Lyden Bridge; New Mexico state plane coordinates 1,876,400 feet north and 562,900 feet east. NAD 83, UTM $13-4001$ 855 N; 0406676 E.

A—0 to 3 inches; very pale brown (10YR 7/3) loam, brown (10YR 5/3) moist; weak thin platy structure; soft, very friable, slightly sticky and moderately plastic; common very fine and fine roots; common very fine tubular pores; slightly alkaline; abrupt smooth boundary.
BA—3 to 5 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine continuous tubular pores; slightly alkaline; clear smooth boundary.
Bt—5 to 10 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine roots; common very fine and few medium continuous tubular pores; few thin clay films on faces of peds; slightly alkaline; clear smooth boundary.
Btk1-10 to 16 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine roots, common very fine continuous tubular pores; common moderately thick clay films on faces of peds and in pores; strongly effervescent; few fine rounded masses of calcium carbonate; moderately alkaline; clear smooth boundary.
Btk2—16 to 30 inches; light brown (10YR 6/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine roots; few fine continuous tubular pores; common thin clay films on faces of peds and in pores; strongly effervescent; common fine irregular and rounded masses of calcium carbonate; moderately alkaline; gradual smooth boundary.
Bk1-30 to 38 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/4) moist; massive; hard, firm, moderately sticky and moderately plastic; few fine roots; few fine continuous tubular pores; strongly effervescent; few fine irregular masses of calcium carbonate; moderately alkaline; clear wavy boundary.

2Bk2—38 to 60 inches; white (10YR 8/1) gravelly sandy clay loam, very pale brown (10YR 7/3) moist; massive; hard, friable, moderately sticky and slightly plastic; violently effervescent; many medium and large rounded and irregular nodules and masses of calcium carbonate; 15 percent gravel and 5 percent cobbles; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 4 to 7 dry, 4 or 5 moist
Chroma: 3 or 4
Bt and Btk horizons:
Value: 4 to 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam, silty clay loam, or loam
Bk and 2Bk horizons:
Value: 6 to 8 dry, 4 to 7 moist
Chroma: 1 to 5
Texture, fine earth fraction: clay loam or sandy clay loam
Calcium carbonate equivalent: 25 to 35 percent
Rock fragments: 15 to 25 percent gravel and 0 to 5 percent cobbles

## Chrishall Series

Map unit: 704
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} . / \mathrm{hr}$. (moderately rapid)
Landform: stream terraces
Parent material: slope alluvium derived from volcanic material
Elevation: 6,400 to 9,000 feet (1,951 to 2,743 meters)
Slope: 1 to 15 percent
Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Coarse-loamy, mixed Pachic Haploborolls

## Typical Pedon

Chrishall gravelly loam, in an area of map unit 704, Chrishall gravelly loam, 1 to 15 percent slopes; about 7 miles north and 4 miles west of Los Alamos, New Mexico; New Mexico state plane coordinates 1,811,100 feet north and 462,200 feet east. NAD 83, UTM 13 - 3982350 N; 0375734 E.

A1-0 to 17 inches; dark grayish brown (10YR 4/2) gravelly loam, black (10YR 2/1) moist; moderate fine and medium granular structure; soft, very friable, moderately sticky and moderately plastic; many very fine, fine and common medium roots; common very fine, fine and few medium vesicular pores; 20 percent gravel; slightly acid; clear smooth boundary.
A2-17 to 38 inches; dark gray (10YR 4/1) gravelly fine sandy loam, black (10YR 2/1) moist; moderate fine and medium granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common very fine, fine and few medium vesicular pores; 15 percent gravel; neutral; clear smooth boundary.

Bw-38 to 55 inches; pale brown (10YR 6/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; common fine and medium vesicular pores; few thin 0.20 inch sandy loam lamellae; 30 percent gravel; neutral; clear wavy boundary.
C-55 to 60 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 3/ 3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common fine and medium vesicular pores; 30 percent gravel; neutral.

## Range in Characteristics

A horizon:
Hue:2.5Y or 10YR
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 1 to 3
Rock fragments: 15 to 25 percent gravel
Bw and C horizons:
Hue: 2.5Y or 10YR
Value: 6 to 8 dry, 3 to 5 moist
Chroma: 2 to 4
Rock fragments: 15 to 35 percent gravel

## Colomex Series

Map unit: 61
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in ./hr. (moderate)
Landform: stream terraces
Parent material: stream alluvium derived from igneous material
Elevation: 7,500 to 8,200 feet (2,286 to 2,499 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. ( 4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Loamy-skeletal, mixed Mollic Eutroboralfs

## Typical Pedon

Colomex gravelly silt loam, in an area of map unit 61, Colomex gravelly silt loam, 0 to 3 percent slopes; about 25 yards south of P. Gallegos Memorial Park baseball field in Chama, New Mexico; New Mexico state plane coordinates 2,143,684 feet north and 402,105 feet east. NAD 83, UTM $13-4083943$ N; 0358734 E.

A1-0 to 3 inches; brown (10YR 5/3) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial pores; 15 percent gravel and 5 percent cobbles; slightly alkaline; clear smooth boundary.
A2-3 to 6 inches; brown (10YR 5/3) gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 15 percent gravel and 5 percent cobbles; neutral; clear smooth boundary.

2Bt1-6 to 12 inches; light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; common very fine and fine pores; clay films bridging sand grains and coating rock fragments; 20 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
2Bt2-12 to 34 inches; brown (7.5YR 4/4) extremely cobbly sandy clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common very fine and fine pores; clay films bridging sand grains and coating rock fragments; 40 percent gravel and 40 percent cobbles; neutral; gradual wavy boundary.
3Bt3-34 to 60 inches; brown (7.5YR 4/4) very gravelly loamy sand, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; soft, loose, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine pores; clay films coating rock fragments; 40 percent gravel and 10 percent cobbles; neutral.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 2 or 3
Rock fragments: 15 to 20 percent gravel and 0 to 5 percent cobbles
2Bt and 3Bt horizons:
Value: 4 to 6 dry, 4 or 5 moist
Rock fragments: 20 to 40 percent gravel, 10 to 40 percent cobbles, and 0 to 5 percent stones

## Croftshaw Series

Map units: 208, 209
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in ./hr. (moderately slow)
Landform: mountain slopes and stream terraces
Parent material: colluvium derived from igneous material
Elevation: 9,500 to 10,400 feet ( 2,896 to 3,170 meters)
Slope: 3 to 20 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Fine-loamy, mixed Argic Cryoborolls

## Typical Pedon

Croftshaw loam, in an area of map unit 209, Crubas-Bywell-Croftshaw complex, 0 to 15 percent slopes; about 15.7 miles east and 5.3 miles south of Chama, New Mexico; New Mexico state plane coordinates 2,119,060 feet north and 485,135 feet east. NAD 83, UTM 13 - 4076108 N; 0383939 E.

A-0 to 8 inches; brown (10YR 4/3) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; few medium and fine roots; few very fine and fine interstitial pores; 5 percent gravel; slightly acid; clear smooth boundary.

Bt1-8 to 14 inches; brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine and common very fine roots; few fine and common very fine tubular pores; common moderately thick clay films on faces of peds; 5 percent gravel; moderately acid; clear wavy boundary.
Bt2-14 to 28 inches; brownish yellow (10YR 6/6) clay loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine and very fine roots; few fine and very fine tubular pores; common thin clay films on faces of peds; few sandsize glass shards; 10 percent gravel; moderately acid; gradual wavy boundary.
$2 \mathrm{C}-28$ to 60 inches; very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; few sand-size glass shards; 10 percent gravel; slightly acid.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry, 2 or 3 moist
Chroma: 2 or 3
Rock fragments: 0 to 10 percent gravel
Bt horizon:
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 3 to 6
Rock fragments: 5 to 15 percent gravel
2C horizon (when present):
Value: 6 or 7 dry, 5 or 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: clay loam or sandy loam
Rock fragments: 5 to 15 percent gravel

## Crubas Series

Map unit: 209
Depth class: very deep
Drainage class: poorly drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: stream terraces and swales
Parent material: stream alluvium derived from igneous material
Elevation: 9,700 to 10,400 feet (2,957 to 3,170 meters)
Slope: 0 to 2 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Fine, mixed Typic Cryaquolls
Typical Pedon
Crubas clay loam, in an area of map unit 209, Crubas-Bywell-Croftshaw complex, 0 to 15 percent slopes; about 13 miles east and 4 miles south of Chama, New Mexico; New Mexico state plane coordinates 2,127,490 feet north and 440,625 feet east. NAD 83, UTM 13 - 4078854 N; 0370409 E.

Oi-0 to 3 inches; pine needles
A—3 to 15 inches; dark grayish brown (10YR 4/2) clay loam, very dark brown (10YR 2/2) moist; common medium distinct strong brown (7.5YR 5/8) mottles; weak fine granular structure; soft, very friable, moderately sticky and moderately plastic; many fine and very fine roots; common fine and very fine interstitial pores; strongly acid; abrupt smooth boundary.
Cg1-15 to 37 inches; gray (10YR 6/1) clay, gray (10YR 5/1) moist; common medium distinct strong brown (7.5YR 5/8) mottles; massive; very hard, firm, very sticky and very plastic; few fine and very fine roots; few fine and common very fine tubular pores; strongly acid; clear wavy boundary.
2Cg2—37 to 60 inches; gray (10YR 6/1) gravelly clay, gray (10YR 5/1) moist; many large distinct strong brown (7.5YR 5/8) mottles; massive; hard, firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; 20 percent gravel; strongly acid.

## Range in Characteristics

A horizon:
Value: 2 or 3 moist
Cg horizon:
Value: 5 or 6 dry
Chroma: 1 or 2
2Cg horizon:
Value: 5 or 6 dry
Chroma: 1 or 2
Rock fragments: 15 to 30 percent gravel
Note: A water table may occur within 20 inches of the surface.

## Dermala Series

Map units: 145, 147
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} . / \mathrm{hr}$. (moderately slow)
Landform: hills
Parent material: old slope alluvium over colluvium derived from igneous and sedimentary rock
Elevation: 6,500 to 7,800 feet (1,981 to 2,377 meters)
Slope: 20 to 50 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, mixed, mesic Aridic Haplustalfs
Typical Pedon
Dermala very gravelly loam, in an area of map unit 145, Dermala-Rosced complex, 20 to 50 percent slopes; about 5 miles north and 2.5 miles east of Chimayo, New Mexico; New Mexico state plane coordinate 1,848,000 feet north and 603,800 feet east. NAD 83, UTM 13 - 3993041 N; 0419027 E.

A-0 to 3 inches; dark yellowish brown (10YR 4/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; weak medium granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine continuous tubular pores; 40 percent gravel and 10 percent cobbles; slightly alkaline; clear smooth boundary.
Bt-3 to 12 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common very fine, fine and medium roots; common very fine and fine continuous tubular pores; few thin clay films on faces of peds; 10 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
Btk1—12 to 32 inches; brown (7.5YR 5/4) gravelly clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and common medium roots; common fine continuous tubular pores; common moderately thick clay films on faces of peds and in pores; strongly effervescent; few fine rounded and irregular masses of calcium carbonate; 25 percent gravel and 5 percent cobbles; moderately alkaline; clear smooth boundary.
Btk2—32 to 49 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine roots; few fine continuous tubular pores; few thin clay films on faces of peds; slightly effervescent; few fine rounded masses of calcium carbonate; 5 percent gravel; moderately alkaline; clear smooth boundary.
C—49 to 60 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; massive; hard, firm, moderately sticky and moderately plastic; few fine roots; common fine continuous tubular pores; 5 percent gravel; slightly effervescent; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Rock fragments: 35 to 45 percent gravel and 5 to 10 percent cobbles
Bt and Btk horizons:
Hue: 7.5YR or 10YR
Value: 5 or 6 dry, 4 or 5 moist
Rock fragments: 5 to 25 percent gravel and 0 to 5 percent cobbles
C horizon:
Hue: 10YR or 7.5YR
Value: 5 to 7 dry, 4 to 6 moist
Texture, fine earth fraction: loamy sand, sandy loam, or clay loam
Rock fragments: 5 to 25 percent gravel and 0 to 5 percent cobbles

## Doslomas Series

Map unit: 65
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: stream terraces
Parent material: stream alluvium derived from sandstone and shale
Elevation: 7,000 to 8,000 feet (2,134 to 2,438 meters)
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Clayey over sandy or sandy-skeletal, mixed Typic Argiborolls

## Typical Pedon

Doslomas loam, in an area of map unit 65, Doslomas loam, 0 to 3 percent slopes; about 0.2 mile south of Chama, New Mexico; New Mexico state plane coordinates 2,132,900 feet north and 404,500 feet east. NAD 83, UTM $13-4080647$ N; 0359 421 E.

A—0 to 7 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; many very fine and fine roots; few very fine pores; neutral; abrupt smooth boundary.
Bt1-7 to 12 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, firm, very sticky and very plastic; common fine and few coarse roots; few very fine and fine pores; few thin clay films on faces of peds; 5 percent gravel; neutral; clear smooth boundary.
Bt2—12 to 28 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR $3 / 4$ ) moist; strong coarse subangular blocky structure; hard, firm, very sticky and very plastic; few fine and medium roots; few very fine and fine pores; common moderately thick clay films on faces of peds; 5 percent gravel; slightly alkaline; abrupt wavy boundary.
2C-28 to 60 inches; brown (10YR 5/3) extremely cobbly coarse sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; few fine roots; 30 percent gravel and 40 percent cobbles; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry, 2 or 3 moist
Chroma: 2 or 3
Rock fragments: 0 to 10 percent gravel
Bt horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam or clay
Rock fragments: 0 to 10 percent gravel
2C horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Rock fragments: 25 to 45 percent gravel and 35 to 45 percent cobbles

## Dula Series

Map units: 64
Depth class: very deep
Drainage class: poorly drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: flood plains
Parent material: stream alluvium derived from sandstone and shale
Elevation: 7,000 to 8,000 feet (2,134 to 2,438 meters)

Slope: 0 to 2 percent

## Climatic data:

Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, frigid Cumulic Haplaquolls

Typical Pedon
Dula loam, in an area of map unit 64, Dula loam, 0 to 2 percent slopes; within the village limits of Chama, New Mexico; New Mexico state plane coordinates 2,143,947 feet north and 403,940 feet east. NAD 83, UTM $13-4084016$ N; 0359295 E.

A1-0 to 4 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; strong medium granular structure; slightly hard, friable, moderately sticky and moderately plastic; many very fine and fine roots; common fine interstitial pores; neutral; abrupt smooth boundary.
A2-4 to 11 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR $3 / 2$ ) moist; few fine faint yellowish brown (10YR 5/4) mottles; moderate coarse granular structure; slightly hard, friable, moderately sticky and moderately plastic; many fine and common very fine roots; common fine tubular pores; neutral; clear smooth boundary.
Bg1-11 to 18 inches; grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y $3 / 2$ ) moist; few fine distinct yellowish brown (10YR 5/8) mottles; massive; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few fine tubular pores; neutral; clear smooth boundary.
Bg2-18 to 28 inches; grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y $3 / 2$ ) moist; many medium distinct reddish yellow (7.5YR 6/8) mottles; massive; slightly hard, friable, moderately sticky and moderately plastic; few fine roots; few fine tubular pores; neutral; clear smooth boundary.
2C-28 to 60 inches; variegated extremely gravelly coarse sand; single grain; loose, nonsticky and nonplastic; few fine roots; 60 percent gravel and 10 percent cobbles; neutral.

## Range in Characteristics

Note: A water table may occur within 12 to 42 inches of the surface.
A horizon:
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 2 or 3
Bg and 2 C horizons:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 1 to 4
Rock fragments: 40 to 60 percent gravel and 10 to 25 percent cobbles in the 2C horizon

## Elbuck Series

Map unit: 203
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in ./hr. (moderate)
Landform: mountain slopes
Parent material: slope alluvium and colluvium derived from sandstone and shale

Elevation: 7,700 to 8,900 feet (2,347 to 2,713 meters)
Slope: 5 to 20 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Taxonomic class: Fine-loamy, mixed Typic Eutroboralfs

## Typical Pedon

Elbuck gravelly loam, in an area of map unit 203, Nabor-Elbuck complex, 5 to 35 percent slopes; about 1.8 miles east and 0.6 miles north of Chama, New Mexico; New Mexico state plane coordinates 2,151,125 feet north and 413,315 feet east. NAD 83, UTM 13 - 4086166 N; 0362180 E.

A-0 to 3 inches; very dark grayish brown (10YR $3 / 2$ ) gravelly loam, very dark brown (10YR 2/2 moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; few medium, coarse, common fine and very fine roots; common very fine vesicular pores; 25 percent gravel, 5 percent cobbles; neutral; abrupt wavy boundary.
Bt1-3 to 14 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure parting to moderate fine granular; hard, firm, slightly sticky and slightly plastic; few medium, fine and very fine roots; common very fine tubular pores; common thin clay films on faces of peds; 20 percent gravel; moderately acid; clear wavy boundary.
Bt2-14 to 45 inches; pale brown (10YR 6/3) gravelly clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; very hard, very firm, moderately sticky and moderately plastic; few coarse and common medium roots; few very fine tubular pores; common thin clay films on faces of peds; 20 percent gravel; moderately acid; gradual wavy boundary.
C-45 to 60 inches; light brownish gray (10YR 6/2) gravelly clay loam, dark grayish brown (10YR 4/2) moist; massive; very hard, very firm, moderately sticky and moderately plastic; few coarse and very fine roots; few very fine pores; 20 percent gravel; moderately acid.

## Range in Characteristics

A horizon:
Rock fragments: 15 to 30 percent gravel and 0 to 5 percent cobbles
Bt and C horizons:
Rock fragments: 15 to 25 percent gravel and 0 to 10 percent cobbles

## Elpedro Series

Map unit: 136<br>Depth class: very deep<br>Drainage class: well drained<br>Slowest permeability: 0.2 to 0.6 in ./hr. (moderately slow)<br>Landform: fan remnants and hills<br>Parent material: old alluvium derived from sandstone and shale<br>Elevation: 6,500 to 7,400 feet (1,981 to 2,256 meters)<br>Slope: 1 to 5 percent

## Climatic data:

Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-silty, mixed, mesic Aridic Haplustalfs
Typical Pedon
Elpedro silt loam, in an area of map unit 136, Elpedro silt loam, 1 to 5 percent slopes; 2.2 miles west and 2.7 miles south of the Spills Ranch Headquarters, New Mexico. New Mexico state plane coordinates 2,030,050 feet north and 408,330 feet east. NAD 83, UTM 13 - 4049287 N; 0360179 E.

A-0 to 3 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and moderately plastic; few fine and medium roots; few fine tubular pores; violently effervescent; moderately alkaline; abrupt smooth boundary.
$\mathrm{Bt}-3$ to 25 inches; light yellowish brown (10YR 6/4) silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, very friable, moderately sticky and slightly plastic; common very fine and few fine roots; many fine and few very fine tubular pores; few thin clay films on faces of peds; strongly effervescent; few fine seams of calcium carbonate; moderately alkaline; abrupt irregular boundary.
Bk1-25 to 34 inches; light yellowish brown (10YR 6/4) silty clay loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, moderately sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; few fine seams and threads of calcium carbonate; moderately alkaline; clear wavy boundary.
Bk2-34 to 47 inches; light yellowish brown (10YR 6/4) silty clay loam, yellowish brown (10YR 5/4) moist; massive; hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; strongly effervescent; few fine seams and threads of calcium carbonate; moderately alkaline; clear wavy boundary.
Bk3-47 to 60 inches; light yellowish brown (10YR 6/4) silty clay loam, yellowish brown (10YR 5/4) moist; massive; hard, very friable, moderately sticky and slightly plastic; strongly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Hue: 7.5YR or 10YR
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 2 to 4
Bt horizon:
Hue:7.5YR or 5YR
Value: 3 to 6 dry, 4 to 5 moist
Chroma: 3 to 5
Bk horizon:
Hue: 7.5YR or 10YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam, silt loam, or silty clay loam

## Encicado Series

Map unit: 66
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: swales
Parent material: stream alluvium derived from shale
Elevation: 7,000 to 8,000 feet (2,134 to 2,438 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed Pachic Udic Argiborolls
Typical Pedon
Encicado silty clay loam, in an area of map unit 66, Encicado silty clay loam, 0 to 3 percent slopes; about 0.5 mile directly south of Chama, New Mexico. New Mexico state plane coordinates $2,131,842$ feet north and 403,947 feet east. NAD 83, UTM 13 - 4080327 N; 0359248 E.

A—0 to 17 inches; dark gray (10YR 4/1) silty clay loam, black (10YR 2/1) moist; strong coarse granular structure; hard, firm, moderately sticky and moderately plastic; many fine and medium and few coarse roots; common fine interstitial pores; slightly alkaline; clear smooth boundary.
Bt1-17 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay loam, very dark grayish brown (2.5Y 3/2) moist; strong coarse prismatic structure parting to strong coarse subangular blocky; hard, firm, moderately sticky and moderately plastic; common fine roots; common fine tubular pores; common stress cutans; few thin clay films lining pores; slightly alkaline; clear smooth boundary.
2Bt2—35 to 60 inches; olive brown (2.5Y 4/4) extremely cobbly clay loam, dark grayish brown (2.5Y 4/2) moist; weak fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine roots; few thick clay films on faces of peds; 35 percent gravel and 40 percent cobbles; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 3 or 4 moist, 2 or 3 dry
Bt horizon:
Hue: 10YR or 2.5 Y
Value: 3 or 4 dry, 2 to 4 moist
Chroma: 2 to 6
Texture, fine earth fraction: silty clay loam, clay loam, or clay
2Bt horizon:
Hue: 2.5Y or 10YR
Value: 3 or 4 dry, 2 to 4 moist
Chroma: 2 to 6
Texture, fine earth fraction: clay loam or sandy clay loam
Rock fragments: 25 to 35 percent gravel and 30 to 40 percent cobbles

## Eody Series

Map unit: 137
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: escarpments and mountain slopes
Parent material: colluvium derived from mixed sources
Elevation: 8,100 to 9,700 feet ( 2,469 to 2,957 meters)
Slope: 50 to 80 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Fine, mixed, nonacid Typic Cryorthents

## Typical Pedon

Eody loam, in an area of map unit 137, Yata-Eody loams, 50 to 80 percent slopes; about 4.5 miles north and 1 mile west of Chama, New Mexico; New Mexico state plane coordinates 2,171,610 feet north and 402,970 feet east. NAD 83, UTM $13-40$ 92450 N; 0359110 E.

A-0 to 4 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; common medium, many fine and very fine roots; few fine interstitial and vesicular pores; neutral; clear smooth boundary.
C1-4 to 11 inches; light brownish gray (10YR 6/2) clay, dark grayish brown (10YR
4/2) moist; massive; hard, firm, very sticky and very plastic; common medium, fine and very fine roots; few fine tubular pores; neutral; clear wavy boundary.
C2-11 to 27 inches; light reddish brown (10YR 6/3) silty clay loam, dark yellowish brown (10YR 4/4) moist; massive; very hard, firm, very sticky and very plastic; common medium, fine and very fine roots; few fine tubular pores; neutral; gradual smooth boundary.
C3-27 to 60 inches; brown (10YR 5/3) silty clay, grayish brown (10YR 5/2) moist; massive; very hard, firm, very sticky and very plastic; few very fine and fine roots; few very fine and fine tubular pores; slightly acid.

## Range in Characteristics

A horizon:
Hue: 2.5Y or 10YR
Value: 3 or 4 dry, 2 or 3 moist
Chroma: 1 or 2
C horizon:
Hue: 2.5 Y or 10 YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: silty clay loam, silty clay, or clay

## Espiritu Series

Map unit: 140
Depth class: very deep
Drainage class: well drained

Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: south aspects of escarpments
Parent material: slope alluvium and colluvium derived from igneous material
Elevation: 6,000 to 7,000 feet (1,829 to 2,134 meters)
Slope: 35 to 60 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy-skeletal, mixed, mesic Aridic Haplustalfs

## Typical Pedon

Espiritu very cobbly loam, in an area of map unit 140, Espiritu-Wauquie association, 35 to 60 percent slopes; about 7 miles south and 1 mile east of Chili, New Mexico; New Mexico state plane coordinate 1,821,000 feet north and 535,200 feet east. NAD 83, UTM 13 - 4008881 N; 0382140 E. NAD 83, UTM 13 - 3985 081 N; 0398018 E.

A-0 to 5 inches; brown (7.5YR 5/2) very cobbly loam, brown (7.5YR 4/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; common very fine interstitial pores; 25 percent gravel and 25 percent cobbles; slightly alkaline; clear smooth boundary.
Bt-5 to 19 inches; brown (7.5YR 4/4) very cobbly clay loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few medium, common fine and very fine roots; common very fine tubular pores; common thin clay films on ped faces and lining pores; 30 percent gravel and 20 percent cobbles; slightly alkaline; clear wavy boundary.
Bk1-19 to 40 inches; light brown (7.5YR 6/4) very cobbly sandy clay loam, brown (7.5YR 5/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few medium, common fine and few very fine roots; common very fine tubular pores; slightly effervescent; few thin masses of calcium carbonate on undersides of rock fragments; 25 percent gravel and 25 percent cobbles; slightly alkaline; clear smooth boundary.
Bk2—40 to 60 inches; light brown (7.5YR 6/4) very cobbly sandy loam, brown (7.5YR 5/4) moist; massive; hard, firm, nonsticky and nonplastic; few medium and fine roots; few very fine tubular pores; slightly effervescent; few thin masses of calcium carbonate on undersides of rock fragments; 25 percent gravel and 25 percent cobbles; slightly alkaline.

## Range in Characteristics

A horizon:
Rock fragments: 20 to 30 percent gravel and 20 to 30 percent cobbles
Bt horizon:
Rock fragments: 30 to 40 percent gravel and 5 to 20 percent cobbles
Bk horizons:
Rock fragments: 20 to 30 percent gravel and 20 to 30 percent cobbles

## Ess Series

Map units: 208, 215
Depth class: very deep
Drainage class: well drained

Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: mountain slopes
Parent material: slope alluvium and colluvium derived from igneous material
Elevation: 9,500 to 11,400 feet (2,896 to 3,475 meters)
Slope: 2 to 15 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Loamy-skeletal, mixed Argic Cryoborolls

## Typical Pedon

Ess gravelly loam, in an area of map unit 208, Ess-Croftshaw complex, 3 to 20 percent slopes; about 12.6 miles east and 3.4 miles south of Chama, New Mexico; New Mexico state plane coordinates 2,129,860 feet north and 468,790 feet east. NAD 83, UTM 13 - 4079464 N; 0379001 E.

A-0 to 6 inches; very dark grayish brown (10YR 3/2) gravelly loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; commonly fine and very fine interstitial pores; 20 percent gravel and 5 percent cobbles; slightly acid; clear smooth boundary.
BA—6 to 13 inches; very dark grayish brown (10YR 3/2) gravelly loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine, many fine and few medium roots; common fine vesicular pores; few thin clay films on faces of peds; 15 percent gravel; slightly acid; abrupt wavy boundary.
Bt1-13 to 31 inches; yellowish brown (10YR 5/6) very gravelly sandy clay loam, dark yellowish brown (10YR 4/6) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine and medium roots; few fine vesicular pores; common moderately thick clay films on faces of peds; 45 percent gravel; slightly acid; clear smooth boundary.
Bt2-31 to 40 inches; yellowish brown (10YR 5/6) very cobbly sandy clay loam, dark yellowish brown (10YR 4/6) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine and medium roots; few fine vesicular pores; common moderately thick clay films on faces of peds; 25 percent gravel and 25 percent cobbles; slightly acid; clear smooth boundary.
C-40 to 60 inches; brownish yellow (10YR 6/6) very gravelly sandy clay loam, yellowish brown (10YR 5/6) moist; massive; hard, firm, slightly sticky and slightly plastic; few fine and medium roots; few fine vesicular pores; 35 percent gravel and 15 percent cobbles; slightly acid.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry, and 2 or 3 moist Chroma: 2 or 3
Rock fragments: 10 to 25 percent gravel and 5 to 10 percent cobbles
Bt horizon:
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 3 to 6
Rock fragments: 25 to 60 percent gravel and 0 to 25 percent cobbles

## Florita Series

Map units: 9, 241
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Landform: hills
Parent material: eolian material and slope alluvium derived from sandstone
Elevation: 5,700 to 6,900 feet ( 1,737 to 2,103 meters)
Slope: 2 to 45 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Coarse-loamy, mixed, nonacid, mesic Ustic Torriorthents

## Typical Pedon

Florita sandy loam, in an area of map unit 9, Pinavetes-Florita complex, 2 to 10 percent slopes; about 3.1 miles south of Counselor Trading Post in Escrito Canyon; 2,400 feet south and 600 feet west of the NE corner of section 3, T. 23 N, R. 6 W.

A-0 to 2 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and few fine tubular pores; moderately alkaline; clear smooth boundary.
C1—2 to 6 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine and medium roots; common fine and few medium tubular pores; moderately alkaline; clear smooth boundary.
C2—6 to 24 inches; light yellowish brown (10YR 6/4) 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; moderately alkaline; clear smooth boundary.
C3-24 to 38 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; slightly effervescent; strongly alkaline; clear smooth boundary.
C4—38 to 60 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular pores; slightly effervescent; strongly alkaline.

## Range in Characteristics

A horizon:
Value: 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy loam or fine sandy loam
Rock fragments: 0 to 30 percent gravel C horizon:
Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 2 or 4
Texture, fine earth fraction: sandy loam and coarse sandy loam. This horizon is often stratified with lenses of loam or loamy fine sand.

## Fruitland Series

Map units: 11, 39, 151
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in ./hr. (moderately rapid)
Landform: alluvial fans and stream terraces
Parent material: fan and stream alluvium derived from sandstone
Elevation: 5,500 to 6,600 feet ( 1,676 to 2,012 meters)
Slope: 0 to 5 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Coarse-loamy, mixed, calcareous, mesic Typic Torriorthents
Typical Pedon
Fruitland sandy loam, in an area of map unit 151, Razito-Fruitland complex, 1 to 5 percent slopes; about 0.6 miles east of Alcalde, New Mexico; New Mexico state plane coordinates 1,850,400 feet north and 560,500 feet east. NAD 83, UTM 13 - 40 08881 N; 0382140 E.

A—0 to 3 inches; yellowish brown (10YR 5/4) sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and slightly plastic; few very fine and fine roots; few very fine interstitial pores; 5 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.
C1-3 to 50 inches; light yellowish brown (10YR 6/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine tubular pores; 5 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.
C2—50 to 60 inches; light yellowish brown (10YR 6/4) loamy fine sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; 5 percent gravel; strongly effervescent; moderately alkaline.

## Range in Characteristics

## C horizon:

Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy loam or fine sandy loam. Below 40 inches strata of loamy fine sand, loamy sand, and gravelly sandy loam may occur.

Note: Rock fragments in the profile range from 0 to 10 percent gravel.

## Gilco Series

Map units: 22, 23
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: alluvial fans
Parent material: fan alluvium derived from mixed sources
Elevation: 5,500 to 6,100 feet (1,676 to 1,859 meters)
Slope: 0 to 3 percent

## Climatic data:

Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Coarse-loamy, mixed, calcareous, mesic Typic Torrifluvents

## Typical Pedon

Gilco sandy clay loam, in an area of map unit 23, Gilco sandy clay loam, 0 to 3 percent slopes; 0.2 mile south of Rancho De Abiquiu, New Mexico; New Mexico state plane coordinates $1,898,400$ feet north and 485,600 feet east. NAD 83, UTM 13 - 40 08862 N; 0383207 E.

Ap-0 to 14 inches; light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate medium granular structure; hard, friable, moderately sticky and moderately plastic; many very fine and fine roots; common very fine irregular pores; strongly effervescent; moderately alkaline; abrupt wavy boundary.
C1—14 to 18 inches; brown (7.5YR 5/4) sandy loam, brown (7.5YR 4/2) moist; massive; hard, friable, moderately sticky and moderately plastic; many fine and common medium roots; many very fine irregular pores; strongly effervescent; slightly alkaline; abrupt wavy boundary.
C2—18 to 25 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and common medium roots; few fine irregular pores; slightly effervescent; slightly alkaline; clear smooth boundary.
C3-25 to 60 inches; light gray (10YR 7/2) sandy loam with few strata of loamy sand, grayish brown (10YR 5/2) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and medium roots; few fine irregular pores; slightly effervescent; slightly alkaline.

## Range in Characteristics

Ap horizon:
Hue: 10YR or 7.5YR
Value: 5 or 6 dry and 4 or 5 moist
Texture, fine earth fraction: sandy clay loam or loamy sand
C horizon:
Hue: 10YR or 7.5YR
Value: 5 to 7 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified sandy loam, fine sandy loam, or loamy sand

## Gobernador Series

Map unit: 31
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: stream terraces
Parent material: stream alluvium derived from sandstone and shale
Elevation: 6,000 to 6,800 feet ( 1,829 to 2,073 meters)
Slope: 0 to 2 percent

## Climatic data:

Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine, montmorillonitic, calcareous, mesic Vertic Ustorthents

## Typical Pedon

Gobernador silty clay loam, in an area of map unit 31, Gobernador-Orlie association, 0 to 8 percent slopes; east of Navajo City in Gobernador Canyon, New Mexico; 1,620 feet west and 1,600 feet north of the SE corner of Sec. 27, T. 29 N, R. 6W.

A—0 to 2 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak thin platy structure; hard, friable, moderately sticky and moderately plastic; cracks up to 2 inches wide; few very fine roots; few very fine and fine continuous pores; slightly effervescent; strongly alkaline; clear smooth boundary.
C-2 to 60 inches; brown (10YR 5/3) clay, dark grayish brown (10YR 4/2) moist; massive; very hard, very firm, moderately sticky and moderately plastic; cracks up to 2 inches wide and 22 inches deep; few very fine roots; few very fine vesicular pores; slightly effervescent; very strongly alkaline.

## Range in Characteristics

Reaction: moderately alkaline to very strongly alkaline
Sodicity: SAR of 13 to 45
A horizon:
Hue: 10YR or 7.5YR
Value: 5 to 6 dry, 4 or 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: clay loam or silty clay loam
C horizon:
Hue: 7.5YR or 10YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: clay or silty clay
Salinity: EC is greater than $8 \mathrm{mmhos} / \mathrm{cm}$
Note: Thin strata and lenses of clay loam or silty clay loam can occur below 40 inches.

## Gromes Series

Map units: 206, 207
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: mountain slopes
Parent material: slope alluvium and colluvium derived from igneous material
Elevation: 9,700 to 11,000 feet ( 2,957 to 3,353 meters)
Slope: 15 to 40 percent

Climatic data:
Mean annual precipitation: 28 to 35 inches (711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Loamy-skeletal, mixed Typic Cryochrepts
Typical Pedon
Gromes cobbly loam, in an area of map unit 207, Gromes-Rock outcrop complex, 15 to 40 percent slopes; about 15.8 miles east and 2.6 miles south of Chama, New Mexico; New Mexico state plane coordinates 2,122,445 feet north 486,720 feet east. NAD 83, UTM 13 - 4077133 N; 0384435 E.

A—0 to 11 inches; grayish brown (10YR 6/2) cobbly loam, very dark grayish brown (10YR 4/2) moist; strong fine granular structure; slightly hard, friable, nonsticky and nonplastic; few medium, many fine and very fine roots; few very fine interstitial pores; 5 percent gravel, 10 percent cobbles and 5 percent stones; slightly acid; abrupt wavy boundary.
Bw-11 to 25 inches; light yellowish brown (10YR 6/4) very cobbly loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few medium common fine and very fine roots; few very fine tubular pores; 15 percent gravel, 20 percent cobbles and 5 percent stones; slightly acid; clear smooth boundary.
C—25 to 60 inches; light yellowish brown (10YR 6/4) very cobbly loam, yellowish brown (10YR 5/4) moist; massive; hard, firm, slightly sticky and nonplastic; few fine and common very fine roots; few fine tubular pores; 20 percent gravel, 25 percent cobbles and 5 percent stones; slightly acid.

Range in Characteristics
A horizon:
Texture, fine earth fraction: loam
Rock fragments: 5 to 20 percent gravel, 0 to 15 percent cobbles and 0 to 5 percent stones
Bw horizon:
Value: 5 or 6 dry, and 4 or 3 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam or loam
Rock fragments: 15 to 25 percent gravel, 20 to 25 percent cobbles and 0 to 5 percent stones

C horizon:
Chroma: 3 or 4
Texture, fine earth fraction: clay or loam
Rock fragments: 15 to 25 percent gravel, 20 to 25 percent cobbles and 0 to 10 percent stones

## Hagerman Series

Map unit: 248
Depth class: moderately deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: fan remnants
Parent material: slope alluvium derived from sandstone and shale
Elevation: 6,000 to 6,900 feet ( 1,829 to 2,103 meters)

Slope: 2 to 7 percent

## Climatic data:

Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine-loamy, mixed, mesic Ustollic Haplargids
Typical Pedon
Hagerman fine sandy loam, in an area of map unit 248, Hagerman-Silver fine sandy loams, 2 to 7 percent slopes; about 1.4 miles south and 3 miles east of the Ghost Ranch Headquarters; New Mexico state plane coordinates 1,932,800 feet north and 450,200 feet east. NAD 83, UTM 13 - 4019484 N; 0372555 E.

A—0 to 3 inches; brown (7.5YR 5/4) fine sandy loam; brown (7.5YR 4/4) moist; weak fine granular structure; soft, friable, moderately sticky and moderately plastic; common very fine and many fine roots; few very fine irregular pores; slightly alkaline; abrupt wavy boundary.
Bt-3 to 11 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common very fine roots; common very fine tubular pores; few clay films bridging sand grains; strongly effervescent; moderately alkaline; clear smooth boundary.
Btk1-11 to 20 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; hard, very firm, very sticky and moderately plastic; few fine roots; common very fine and fine tubular pores; common moderately thick clay films on faces of peds and in pores; strongly effervescent; few medium rounded masses of calcium carbonate; strongly alkaline; clear smooth boundary.
Btk2-20 to 24 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure; hard, very firm, very sticky and moderately plastic; few fine roots; common very fine and fine tubular pores; few moderately thick clay films on faces of peds and in pores; strongly effervescent; few fine and medium rounded masses of calcium carbonate; strongly alkaline; abrupt wavy boundary.
2R-24 inches; sandstone bedrock.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Bt horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Btk horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 4 or 5
Depth to bedrock: 20 to 40 inches

## Hesperus Series

Map unit: 118
Depth class: very deep
Drainage class: well drained

Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: stream terraces
Parent material: stream alluvium derived from mixed sources
Elevation: 8,000 to 8,700 feet (2,438 to 2,652 meters)
Slope: 1 to 5 percent
Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. ( 4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine-loamy, mixed Pachic Argiborolls

## Typical Pedon

Hesperus loam, in an area of map unit 118, Hesperus-Pastorius-Chamita complex, 0 to 5 percent slopes; 3 miles north and 2.5 miles west of Chama, New Mexico; New Mexico state plane coordinates 2,167,860 feet north and 388,380 feet east. NAD 83, UTM 13 - 4091366 N; 0354648 E.

A-0 to 4 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and moderately plastic; common very fine and fine roots; few very fine vesicular pores; neutral; clear smooth boundary.
BA—4 to 17 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and moderately plastic; common very fine, fine and few medium roots; few very fine and common fine tubular pores; slightly acid; gradual smooth boundary.
Bt1-17 to 26 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few fine and medium roots; few very fine and common fine tubular pores; few thin clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—26 to 38 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; few fine and medium roots; few very fine, fine and medium tubular pores; few thin clay films on faces of peds; slightly acid; clear smooth boundary.
C-38 to 60 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; massive; very hard, firm, moderately sticky and moderately plastic; few fine and medium roots; few fine tubular pores; neutral.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 2 or 3
Bt horizon:
Value: 3 to 5 dry, 2 to 4 moist
Chroma: 2 to 4
C horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 4

## Hogg Series

Map units: 125, 130
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: cuestas and hills
Parent material: colluvium derived from sandstone and shale
Elevation: 7,400 to 8,200 feet ( 2,256 to 2,499 meters)
Slope: 2 to 25 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed Mollic Eutroboralfs
Typical Pedon
Hogg loam, in an area of map unit 125, Hogg-Mara loams, 2 to 12 percent slopes; about 5 miles west and 2.5 miles south of Chama on Quarrels Ranch, New Mexico; New Mexico state plane coordinates 2,125,210 feet north and 375,210 feet east. NAD 83, UTM 13 - 4078420 N; 0350464 E.

A-0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable and slightly stick and slightly plastic; many very fine and fine roots; few very fine irregular vesicular pores; neutral; clear smooth boundary.
Bt1-3 to 6 inches; dark grayish brown (10YR 4/2) clay 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 few medium roots; few fine tubular pores; few thin clay films on faces of peds; neutral; clear smooth boundary.
Bt2-6 to 9 inches; brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; many very fine and fine roots; few fine tubular pores; few thin clay films on faces of peds; neutral; clear wavy boundary.
Bt3-9 to 15 inches; brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; strong fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine, fine and few medium roots; common fine and few medium tubular pores; common thin clay films on faces of peds; slightly alkaline; clear wavy boundary.
Bt4-15 to 29 inches; brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; strong coarse prismatic structure; very hard, very firm, moderately sticky and moderately plastic; common very fine and fine and few medium roots; common fine tubular pores; common thick clay films on faces of peds; slightly effervescent; neutral; abrupt irregular boundary.
Btk1-29 to 44 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine roots; few fine tubular continuous pores; common thin clay films on faces of peds; strongly effervescent; few fine masses of calcium carbonate; slightly alkaline; clear wavy boundary.

Btk2—44 to 60 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine roots; few fine tubular pores; common thin clay films on faces of peds; 10 percent cobbles; strongly effervescent; few fine masses of calcium carbonate; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 2 or 3
Rock fragments: 0 to 10 percent gravel
Bt horizon:
Hue: 7.5YR or 10YR
Value: 2 to 5 dry, 2 to 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam or clay
Rock fragments: 0 to 15 percent gravel
Btk horizon:
Hue: 7.5YR or 10YR
Value: 6 to 8 dry, 4 to 7 moist
Chroma: 2 to 6
Texture, fine earth fraction: clay loam or clay
Rock fragments: 10 to 35 percent gravel and 0 to 10 percent cobbles
Calcium carbonate equivalent: 15 to 50 percent

## Jocity Series

Map units: 22, 24
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} . / \mathrm{hr}$. (moderately slow)
Landform: alluvial fans
Parent material: fan alluvium derived from mixed sources
Elevation: 5,500 to 6,100 feet ( 1,676 to 1,859 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches ( 203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Fine-loamy, mixed, calcareous, mesic Typic Torrifluvents

## Typical Pedon

Jocity sandy clay loam, in an area of map unit 24; Jocity sandy clay loam, 0 to 1 percent slopes about 0.8 mile due south of the intersection of Highways 84 and 64; 2,600 feet south and 1,200 feet east of the northwest corner, section 11, T.20N., R.8E.

Ap-0 to 14 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; strong medium granular structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine, fine and medium roots; few very fine, fine and medium tubular pores; slightly effervescent; moderately alkaline; abrupt smooth boundary.

C1-14 to 33 inches; pale brown (10YR 6/3) stratified fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common fine, few medium and coarse roots; common very fine, few fine tubular pores; slightly effervescent; moderately alkaline; abrupt smooth boundary.
C2—33 to 60 inches; pale brown (10YR 6/3) stratified sandy clay loam, brown (10YR 4/3) moist; massive; hard, very friable, moderately sticky and moderately plastic; common very fine and fine roots; few very fine tubular pores; 5 percent gravel; slightly effervescent; moderately alkaline.

## Range in Characteristics

## Ap horizon:

Texture, fine earth fraction: sandy clay loam or sandy loam
C horizon:
Texture, fine earth fraction: stratified sandy loam, fine sandy loam, sandy clay loam, and clay loam

## Katlon Series

Map unit: 200
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: mountain slopes
Parent material: colluvium derived from mixed sources
Elevation: 8,500 to 9,500 feet (2,652 to 2,896 meters)
Slope: 25 to 45 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Fine, mixed Mollic Cryoboralfs

## Typical Pedon

Katlon silt loam, in an area of map unit 200, Katlon silt loam, 25 to 45 percent slopes; about 7 miles east of Tierra Amarilla at the upper end of the ski area; New Mexico state plane coordinates 2,073,200 feet north and 435,200 feet east. NAD 83, UTM 13 - 4062331 N; 0368539 E.

Oi-0 to 4 inches; pine needles
A1-4 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and medium roots; few fine tubular pores; neutral; gradual smooth boundary.
A2-10 to 18 inches; very dark gray (10YR 3/1) silt loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; few fine tubular pores; neutral; clear wavy boundary.
E-18 to 31 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common fine roots; few fine tubular pores; common thin silt coats on faces of peds; slightly acid; clear smooth boundary.

Bt1-31 to 38 inches; light yellowish brown (10YR 6/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium prismatic structure parting to moderate medium subangular blocky; hard, firm, very sticky and very plastic; common fine and very fine flat roots; few very fine vesicular pores; common thick clay films on faces of peds; strongly acid; gradual smooth boundary.
Bt2-38 to 80 inches; yellowish brown (10YR 5/4) silty clay loam, dark yellowish brown (10YR 4/4) moist, with few fine distinct strong brown (7.5YR 4/6) mottles; moderate coarse prismatic structure parting to medium prismatic; very hard, firm, very sticky and very plastic; few very fine and fine roots; few very fine vesicular pores; common very thick clay films on faces of peds; very strongly acid.

## Range in Characteristics

A horizon:
Value: 2 or 3 dry and moist
Chroma: 1 or 2
E horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Rock fragments: 0 to 5 percent cobbles and 0 to 5 percent gravel
Bt horizon:
Hue: 10YR or 7.5YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: silty clay loam or silty clay
Rock fragments: 0 to 5 percent cobbles and 0 to 5 percent gravel

## Kunz Series

Map unit: 50
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: hills
Parent material: slope alluvium derived from sandstone and shale
Elevation: 7,300 to 7,900 feet ( 2,225 to 2,408 meters)
Slope: 5 to 15 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine-loamy, mixed Mollic Eutroboralfs
Typical Pedon
Kunz sandy loam, in an area of map unit 50, Stout-Kunz sandy loams, 5 to 15 percent slopes; about 2.5 miles south and 1.6 miles east of Lindrith, New Mexico; New Mexico state plane coordinates 1,917,000 feet north and 275,000 feet east. NAD 83, UTM 13 - 4015359 N; 0319098 E.

A-0 to 3 inches; brown (7.5YR 4/4) sandy loam, dark brown (7.5YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; common very fine vesicular pores; neutral, abrupt smooth boundary.

Bt1-3 to 17 inches; brown (7.5YR 4/4) sandy clay loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine, fine and medium roots; common very fine pores; common thin clay films on faces of peds; neutral; clear smooth boundary.
Bt2—17 to 38 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular pores; few thin clay films on faces of peds; slightly effervescent; slightly alkaline; clear smooth boundary.
C—38 to 60 inches; brown (7.5YR 4/4) sandy clay loam, brown (7.5YR 4/4) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular pores; slightly effervescent; slightly alkaline.

## Range in Characteristics

Calcium carbonate equivalent: Bt 2 and C horizons range from 3 to 7 percent Rock fragments: 0 to 10 percent channers

## Laventana Series

Map unit: 711
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: mountain slopes
Parent material: slope alluvium derived from tuff
Elevation: 8,400 to 9,100 feet (2,560 to 2,774 meters)
Slope: 15 to 40 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Taxonomic class: Loamy-skeletal, mixed Mollic Eutroboralfs

## Typical Pedon

Laventana cobbly loam, in an area of map unit 711, Laventana cobbly loam, 15 to 40 percent slopes; about 20 miles west of Santa Clara Pueblo, New Mexico; New Mexico state plane coordinates 1,813,100 feet North and 456,800 feet East. NAD 83, UTM 13 - 3982980 N; 0374096 E.

A1-0 to 5 inches; grayish brown (10YR 5/2) cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; soft, very friable, moderately sticky and moderately plastic; common very fine and medium roots; few very fine interstitial pores; 5 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
A2-5 to 11 inches; light brownish gray (10YR 6/2) cobbly fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common fine medium and few coarse roots; few very fine and common fine tubular pores; 10 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.

E-11 to 23 inches; light gray (10YR 7/2) cobbly sandy clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; few very fine and common fine tubular pores; 5 percent gravel and 10 percent cobbles; neutral; gradual smooth boundary.
Bt1-23 to 44 inches; reddish yellow (7.5YR 6/6) extremely stony sandy clay loam, strong brown (7.5YR 4/6) moist; moderate medium and coarse subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; few very fine, fine and medium roots; common fine tubular pores; common moderately thick clay films on faces of peds; 15 percent gravel, 25 percent cobbles, 30 percent stones; neutral; gradual wavy boundary.
Bt2—44 to 60 inches, pink (7.5YR 7/4) very stony sandy clay loam, brown (7.5YR 4/4) moist; weak moderate and coarse subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; few moderately thick clay films on faces of peds and oriented clay bridging sand grains; 20 percent cobbles and 35 percent stones; neutral.

## Range in Characteristics

A and E horizons:
Rock fragments: 5 to 15 percent gravel and 10 to 15 percent cobbles
Bt horizon:
Rock fragments: 0 to 15 percent gravel, 20 to 30 percent cobbles, and 30 to 35 percent stones

## Lindrith Series

Map unit: 69
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: alluvial fans
Parent material: fan alluvium derived from sandstone and shale
Elevation: 6,600 to 7,300 feet (2,012 to 2,225 meters)
Slope: 2 to 7 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Coarse-loamy, mixed, calcareous, mesic Typic Ustorthents

## Typical Pedon

Lindrith silty clay loam, in an area of map unit 69, Lindrith-Royosa complex, 2 to 7 percent slopes; about 2.5 miles north and 8 miles west of Lindrith, New Mexico; 600 feet west and 1,400 feet south of the northeast corner of Sec.7, T.24N.,R.3W.

A—0 to 3 inches; brown (10YR $5 / 3$ ) silty clay loam, brown (10YR 4/3) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common fine tubular pores; slightly effervescent; slightly alkaline; clear smooth boundary.
C1-3 to 11 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; massive; hard, friable, moderately sticky and moderately plastic; common very fine and few medium roots; common fine tubular pores; slightly effervescent; slightly alkaline, clear smooth boundary.

C2—11 to 25 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; few fine and very fine tubular pores; slightly effervescent; neutral; gradual smooth boundary.
C3-25 to 37 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and medium roots; few fine tubular pores; 3 percent gravel; slightly effervescent; neutral; gradual smooth boundary.
C4-37 to 50 inches; yellowish brown (10YR 5/6) sandy loam, dark yellowish brown (10YR 4/6) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; slightly effervescent; neutral; gradual smooth boundary.
C5-50 to 67 inches; yellowish brown (10YR 5/6) loamy sand, dark yellowish brown (10YR 4/6) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; strongly effervescent; slightly alkaline.

## Range in Characteristics

Rock fragments: 0 to 10 percent gravel
A horizon (an AC horizon occurs in some pedons):
Hue: 10YR or 2.5 Y
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 6
C horizon:
Hue: 10YR or 7.5YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: Often stratified, but averages 10 to 18 percent clay and 40 to 75 percent sand
Note: Individual pedons may contain sandstone bedrock below 50 inches.

## Lobat Series

Map unit: 201
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: mountain slopes
Parent material: colluvium derived from igneous material
Elevation: 8,200 to 9,800 feet (2,499 to 2,987 meters)
Slope: 15 to 60 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Taxonomic class: Fine-loamy, mixed Mollic Eutroboralfs
Typical Pedon
Lobat gravelly loam, in an area of map unit 201, Lobat-Abreu gravelly loams, 15 to 60 percent slopes; about 4.8 miles east and 0.9 mile south of Chama, New Mexico; New Mexico state plane coordinates 2,142,370 feet north and 428,940 feet east.

Oi-0 to 1 inch; pine needles
A-1 inch to 7 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; few coarse and medium, many fine and very fine roots; common fine and very fine interstitial pores; 15 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.
E—7 to 20 inches; pink (7.5YR 7/4) gravelly clay loam, brown (7.5YR 5/4) moist; weak fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common medium, fine and very fine roots; common fine tubular pores; 15 percent gravel and 5 percent cobbles; slightly acid; gradual wavy boundary.
Bt-20 to 48 inches; light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine and very fine roots; common fine tubular pores; common moderately thick clay films on faces of peds; 20 percent gravel and 10 percent cobbles; slightly acid; gradual wavy boundary.
C—48 to 60 inches; pink (7.5YR 7/4) gravelly sandy clay loam, brown (7.5YR 5/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few fine roots; common fine tubular pores; 15 percent gravel and 5 percent cobbles; neutral.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 2 or 3
Rock fragments: 15 to 20 percent gravel and 5 to 20 percent cobbles
E horizon:
Value: 6 or 7 dry, 4 or 5 moist
Chroma: 2 or 4
Rock fragments: 10 to 25 percent gravel and 5 to 10 percent cobbles
Bt horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 4
Rock fragments: 10 to 20 percent gravel and 5 to 10 percent cobbles
C horizon:
Value: 6 or 7 dry
Rock fragments: 5 to 15 percent gravel and 0 to 5 percent cobbles

## Losmarios Series

Map unit: 249
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: alluvial fans
Parent material: fan alluvium derived from sandstone and shale
Elevation: 6,100 to 6,800 feet ( 1,859 to 2,073 meters)
Slope: 10 to 35 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine, mixed, mesic Ustollic Camborthids

## Typical Pedon

Losmarios extremely cobbly sandy clay loam, in an area of map unit 249, Losmarios extremely cobbly sandy clay loam, 10 to 35 percent slopes; about 1.0 mile south and 1.8 miles east of the north end of Rio Chama, Piedra Lumbre Grant boundary junction; New Mexico state plane coordinates 1,924,000 feet north and 417,200 feet east. NAD 83, UTM $13-4016933$ N; 0362463 E.

A-0 to 6 inches; pale brown (10YR 6/3) extremely cobbly sandy clay loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few very fine discontinuous irregular pores; 30 percent gravel and 40 percent cobbles; strongly effervescent; slightly alkaline; abrupt smooth boundary.
2Bw-6 to 18 inches; light brownish gray (10YR 6/2) clay, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; common fine discontinuous irregular pores; 10 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.
2Bk-18 to 29 inches; grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine continuous tubular pores; strongly effervescent; few fine calcium carbonate accumulations; moderately alkaline; clear smooth boundary.
2C-29 to 60 inches; grayish brown (10YR 5/2) silty clay, dark grayish brown (10YR 4/2) moist; massive; very hard, very firm, very sticky and very plastic; few very fine roots; few very fine discontinuous irregular pores; strongly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry
Chroma: 3 or 4
Rock fragments: 25 to 35 percent gravel and 40 to 50 percent cobbles
2Bw and 2Bk horizons:
Value: 5 or 6 dry
Chroma: 2 to 4
Rock fragments: 0 to 10 percent gravel
2C horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3

## Maia Series

Map unit: 245
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: stream terraces
Parent material: stream alluvium derived from volcanic material
Elevation: 7,100 to 7,800 feet ( 2,164 to 2,377 meters)
Slope: 1 to 5 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, mixed, mesic Aridic Haplustalfs
Typical Pedon
Maia loam, in an area of map unit 245, Maia-Manzano complex, 0 to 5 percent slopes; about 2.7 miles south of the Vallecitos and Polvadera road junction on the Abiquiu Land Grant; New Mexico state plane coordinates 1,856,249 feet north and 473,751 feet east. NAD 83, UTM 13 - 3996063 N; 0379431 E.

A—0 to 4 inches; yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; few very fine interstitial pores; 5 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.
Bt1—4 to 10 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable slightly sticky and slightly plastic; many fine and very fine roots; few very fine tubular pores; few thin clay films in pores; 5 percent gravel; slightly effervescent, moderately alkaline; clear smooth boundary.
Bt2—10 to 16 inches; dark yellowish brown (10YR 4/4) clay loam, brown (10YR 4/3)
moist; strong subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common fine and very fine roots; few very fine tubular pores; common thin clay films on faces of peds; 10 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.
Btk-16 to 25 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; strong subangular blocky structure; hard, firm, moderately sticky and slightly plastic; common fine and very fine roots; few very fine tubular pores; few thin clay films on faces of peds; 15 percent gravel; violently effervescent; few fine threads and seams of calcium carbonate; strongly alkaline; clear smooth boundary.
Bk1—25 to 40 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/6) moist; massive; very hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; few very fine tubular pores; 15 percent gravel; violently effervescent; few fine threads and seams of calcium carbonate; strongly alkaline; clear wavy boundary.
Bk2—40 to 60 inches; very pale brown (10YR 7/3) gravelly loam, pale brown (10YR 6/3) moist; massive; extremely hard, firm, slightly sticky and slightly plastic; few very fine tubular pores; violently effervescent; 15 percent gravel; strongly alkaline.

## Range in Characteristics

A and Bt horizons:
Rock fragments: 0 to 10 percent gravel
Btk and Bk horizons:
Rock fragments: 15 to 30 percent gravel

## Manzano Series

Map unit: 245
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)

Landform: flood plains
Parent material: stream alluvium derived from volcanic material
Elevation: 7,100 to 7,800 feet (2,164 to 2,377 meters)
Slope: 0 to 2 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, mixed, mesic Cumulic Haplustolls
Typical Pedon
Manzano fine sandy loam, in an area of map unit 245, Maia-Manzano complex, 0 to 5 percent slopes; about 0.9 mile south and 0.4 mile west of the Vallecitos and Polvadera road junction on the Abiquiu Land Grant; New Mexico state plane coordinates 1,861,300 feet north and 471,300 feet east. NAD 83, UTM 13 - 3997 $612 \mathrm{~N} ; 0378704 \mathrm{E}$.

A-0 to 3 inches; grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and nonplastic; common fine and few very fine roots; few very fine interstitial pores; 5 percent gravel; neutral; clear smooth boundary.
Bw1-3 to 9 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine tubular pores; 5 percent gravel; slightly effervescent; neutral.
Bw2—9 to 19 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine tubular pores; few thin clay films in pores; neutral; slightly effervescent; clear smooth boundary.
C1-19 to 49 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine tubular pores; neutral; slightly effervescent; abrupt smooth boundary.
2C2—49 to 60 inches; brown (7.5YR 5/4) gravelly loamy sand, brown (7.5YR 4/4) moist; massive; soft, friable, nonsticky nonplastic; few fine roots; few fine tubular pores; 20 percent gravel and 5 percent cobbles; slightly effervescent; neutral.

## Range in Characteristics

2C2 horizon:
Rock fragments: 20 to 25 percent gravel and 0 to 5 percent cobbles

## Mara Series

Map unit: 125
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: hills
Parent material: slope alluvium derived from sandstone and shale
Elevation: 7,400 to 8,200 feet (2,256 to 2,499 meters)
Slope: 2 to 12 percent

Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine-loamy, mixed, frigid Typic Ustochrepts

## Typical Pedon

Mara loam, in an area of map unit 125, Hogg-Mara loams, 2 to 12 percent slopes; about 6 miles west and 2.5 miles south of Chama on the Lee Wood Ranch, New Mexico state plane coordinates $2,126,040$ feet north and 368,850 feet east. NAD 83, UTM 13 - 4078699 N; 0348529 E.

A—0 to 2 inches; dark grayish brown (2.5Y 4/2) loam, very dark grayish brown (2.5Y 3/2) moist; weak fine granular structure; slightly hard, friable, slightly sticky, and plastic;and moderately plastic; many very fine and fine roots; many fine interstitial pores; strongly effervescent; slightly alkaline; abrupt smooth boundary.
Bw1-2 to 10 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate fine and medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common fine and very fine roots; common very fine tubular pores; strongly effervescent; slightly alkaline; clear smooth boundary.
Bw2—10 to 18 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; common very fine and fine tubular pores; strongly effervescent; slightly alkaline; gradual smooth boundary.
Bk1-18 to 30 inches; pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine and medium roots; few fine tubular pores; 10 percent gravel; strongly effervescent; few fine and medium masses of calcium carbonate; slightly alkaline; gradual smooth boundary.
Bk2—30 to 60 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine roots; few fine continuous tubular pores; 10 percent soft shale fragments; strongly effervescent; few medium masses of calcium carbonate; slightly alkaline.

## Range in Characteristics

A horizon:
Hue: 10YR or 2.5YR
Value: 2 to 5 dry, 2 to 4 moist
Chroma: 2 to 4
Bw and Bk horizons:
Hue: 10YR or 2.5 Y
Value: 3 to 6 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or silty clay loam

## Menefee Series

Map units: 20, 40, 102, 110, 115, 220
Depth class: shallow
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: breaks, hills

Parent material: colluvium over residuum derived from sandstone and shale Elevation: 6,100 to 7,800 feet ( 1,859 to 2,377 meters)
Slope: 2 to 45 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy, mixed, calcareous, mesic, shallow Typic Ustorthents

## Typical Pedon

Menefee clay loam, in an area of map unit 102, Menefee-Nalivag complex, 8 to 25 percent slopes; about 1.5 miles south and 0.5 mile east of Llaves, Rio Arriba County, New Mexico; 2,280 feet west and 300 feet north of the SE corner of sec. 32, T. 25 N., R. 1 E .

A—0 to 2 inches; pale yellow (2.5Y 7/4) clay loam, light olive brown (2.5Y 5/4) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; slightly alkaline; abrupt smooth boundary.
C-2 to 14 inches; light yellowish brown (2.5Y 6/4) clay loam, olive brown (2.5Y 4/4) moist; massive; hard, firm, moderately sticky and moderately plastic; common very fine, fine and few medium roots; common fine tubular pores; strongly effervescent; moderately alkaline; gradual smooth boundary.
Cr -14 inches; shale.

## Range in Characteristics

A horizon:
Hue: 10YR and 2.5 Y
Value: 5 to 7 dry, 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam or clay loam
Rock fragments: 0 to 20 percent channers
Chorizon:
Hue: 10YR and 2.5Y
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 4
Depth to paralithic contact: 10 to 20 inches

## Nabor Series

Map unit(s): 203
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: mountain slopes
Parent material: slope alluvium derived from shale
Elevation: 7,700 to 8,900 feet ( 2,347 to 2,713 meters)
Slope: 5 to 35 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Taxonomic class: Fine, mixed Pachic Argiborolls

## Typical Pedon

Nabor silty clay loam, in an area of map unit 203, Nabor-Elbuck complex, 5 to 35 percent slopes; about 4.8 miles east and 1.7 miles south of Monero, New Mexico; New Mexico state plane coordinate 2,139,730 feet north and 346,465 feet east. NAD 83, UTM 13 - 4082960 N; 0341762 E.

A-0 to 6 inches; dark grayish brown (10YR 4/2) silty clay loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common medium, fine and few very fine roots; few very fine vesicular pores; neutral, clear smooth boundary.
Bt1-6 to 17 inches; very dark gray (10YR 3/1) silty clay loam, black (10YR 2/1) moist; strong fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few medium and common fine roots; few very fine continuous tubular pores; common moderately thick clay films on faces of peds; slightly alkaline; clear smooth boundary.
Bt2—17 to 26 inches; very dark gray (10YR 3/1) silty clay, black (10YR 2/1) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few medium and common fine roots; few very fine continuous tubular pores; many moderately thick clay films on faces of peds; neutral; gradual wavy boundary.
Bt3-26 to 37 inches; very dark grayish brown (10YR 3/2) silty clay, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few medium and common fine roots; few very fine continuous tubular pores; common moderately thick clay films on faces of peds; slightly alkaline; clear smooth boundary.
Bk-37 to 60 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few medium and fine roots; few very fine continuous tubular pores; strongly effervescent; very few fine masses of calcium carbonate; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry, 2 or 3 moist
Chroma: 1 or 2
Bt horizon:
Value: 3 or 4 dry, 2 or 3 moist
Chroma: 1 or 2
Texture, fine earth fraction: clay, silty clay, or silty clay loam
Bk horizon:
Value: 4 to 6 dry, 4 or 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: silty clay or silty clay loam
Calcium carbonate equivalent: 0 to 15 percent

## Nalivag Series

Map units: 80, 102
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: fan remnants and hills
Parent material: fan and slope alluvium derived from sandstone and shale

Elevation: 6,900 to 7,400 feet (2,103 to 2,256 meters)
Slope: 2 to 15 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, mixed, calcareous, mesic Typic Ustorthents
Typical Pedon
Nalivag loam, in an area of map unit 80, Orlie-Nalivag loams, 2 to 8 percent slopes; about 7 miles south of Llaves, New Mexico; and about 450 feet west and 930 feet south of the northeast corner of sec. 31, T. 24 N., R. 1 E.

A—0 to 3 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine vesicular pores; neutral; clear smooth boundary.
C1-3 to 27 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; many very fine and common fine roots; common very fine tubular pores; slightly effervescent; slightly alkaline; gradual smooth boundary.
C2—27 to 48 inches; brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine roots; common very fine tubular pores; slightly effervescent; slightly alkaline; gradual smooth boundary.
C3-48 to 60 inches; yellowish brown (10YR 5/4) loam, brown (10YR 4/3) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine roots; few very fine tubular pores; slightly effervescent; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 4 or 5 moist
Chroma: 2 or 4
C horizons:
Value: 5 or 6 dry, 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or loam
Note: Rock fragments in the profile range from 0 to 10 percent gravel.

## Nusmag Series

Map units: 119, 129
Depth class: very deep
Drainage class: moderately well drained
Slowest permeability: . 01 to .06 in./hr. (very slow)
Landform: stream terraces
Parent material: stream alluvium derived from shale
Elevation: 7,400 to 8,000 feet ( 2,256 to 2,438 meters)
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed Cumulic Haploborolls
Typical Pedon
Nusmag clay loam, in an area of map unit 129, Nusmag-Tottles clay loams, 0 to 3 percent slopes; 8.8 miles west and 4.0 miles south of Chama, New Mexico; New Mexico state plane coordinates 2,128,400 feet north and 352,600 feet east. NAD 83, UTM 13 - 4079483 N; 0343586 E.

A-0 to 2 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; slightly hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; common fine tubular pores; slightly alkaline; clear smooth boundary.
Bw-2 to 18 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very firm, moderately sticky and moderately plastic; common very fine and fine roots; common fine and few very fine tubular pores; slightly effervescent; slightly alkaline; gradual smooth boundary.
C-18 to 60 inches; grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; massive; very hard, very firm, very sticky and very plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; slightly alkaline; gradual smooth boundary.

## Range in Characteristics

A horizon:
Hue: 10YR or 2.5 Y
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 3
Bw horizon:
Hue: 10YR or 2.5 Y
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 3
C horizon:
Hue: 10YR or 2.5Y
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 2 or 3
Notes: Rock fragments in the profile range from 0 to 15 percent gravel.
A seasonal water table is within 42 to 60 inches of the surface.

## Oelop Series

Map units: 173, 180, 182
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in ./hr. (moderately slow)
Landform: stream terraces
Parent material: stream alluvium derived from mixed sources
Elevation: 5,900 to 7,200 feet (1,798 to 2,195 meters)
Slope: 0 to 9 percent

## Climatic data:

Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine-loamy, mixed, mesic Ustollic Haplargids

## Typical Pedon

Oelop fine sandy loam, in an area of map unit 173, Oelop fine sandy loam, 1 to 5 percent slopes; about 2.4 miles west and one mile north of Espanola, New Mexico; New Mexico state plane coordinates 1,822,000 feet north and 5,362,000 feet east. NAD 83, UTM 13 - 3986063 N; 0345240 E.

A—0 to 5 inches; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and slightly plastic; common fine and very fine roots; few fine irregular pores; 10 percent gravel; slightly alkaline; clear smooth boundary.
Bt1-5 to 9 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and few fine roots; few very fine tubular pores; few thin clay films on faces of peds; slightly alkaline; clear smooth boundary.
Bt2—9 to 12 inches; brown (7.5 YR7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine roots; few very fine and fine tubular pores; common moderately thick clay films on faces of peds; slightly effervescent; slightly alkaline; clear smooth boundary.
Btk-12 to 19 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine roots; few very fine tubular pores; common moderately thick clay films on faces of peds and in pores; 5 percent gravel; strongly effervescent; few fine irregular seams of calcium carbonate; moderately alkaline; gradual wavy boundary.
Bk1-19 to 45 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 5 percent gravel; violently effervescent; few thin irregular seam and coating of gravel of calcium carbonate; moderately alkaline; gradual smooth boundary.
Bk2—45 to 60 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; 20 percent gravel; violently effervescent; few thin irregular seams and coatings on gravel of calcium carbonate; moderately alkaline.

## Range in Characteristics

A horizon:
Texture, fine earth fraction: fine sandy loam, loam, or sandy loam
Bt horizon:
Value: 5 or 6 dry, 4 or 5 moist
Bk horizon:
Value: 5 through 7 dry, 4 through 6 moist
Texture, fine earth fraction: sandy clay loam, clay loam, loam, or sandy loam

## Orlie Series

Map units: 31, 80, 103, 110
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: fan remnants, mesas and plateaus
Parent material: fan and slope alluvium derived from sandstone and shale
Elevation: 6,100 to 7,500 feet ( 1,859 to 2,286 meters)
Slope: 1 to 8 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, mixed, mesic Aridic Haplustalfs

## Typical Pedon

Orlie fine sandy loam, in an area of map unit 103, Orlie fine sandy loam, 1 to 8 percent slopes; about 0.7 mile east and 3.4 miles south of Ojo Caliente, New Mexico; 1,320 feet north and 1,135 feet east of the southwest corner of section 6, T.23N, R.9E.

A—0 to 3 inches; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; few very fine irregular pores; 10 percent gravel; neutral; abrupt smooth boundary.
Bt-3 to 13 inches; brown (7.5YR 4/4) clay loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine and few very fine roots; common very fine tubular pores; 5 percent gravel; common thin clay films on faces of peds; slightly alkaline; clear smooth boundary.
Btk-13 to 21 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and slightly plastic; few very fine roots; common fine tubular pores; 5 percent gravel; few thin clay films on faces of peds; strongly effervescent; moderately alkaline; clear smooth boundary.
Bk—21 to 60 inches; light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 5/4) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; strongly effervescent; few fine seams and few fine rounded masses of calcium carbonate; moderately alkaline.

## Range in Characteristics

A horizon:
Hue: 7.5YR or 10YR
Value: 4 to 6 dry, 4 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam, loam, or silt loam
Rock fragments: 0 to 10 percent gravel
Bt horizon:
Hue: 7.5YR or 10YR
Value: 4 to 6 dry, 4 or 5 moist
Chroma: 3 to 6

## Palacid Series

Map unit: 146
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in ./hr. (moderately slow)
Landform: hills
Parent material: slope alluvium and colluvium derived from mixed sources
Elevation: 5,800 to 7,200 feet ( 1,768 to 2,195 meters)
Slope: 10 to 40 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. ( 8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine-loamy, mixed, mesic Ustollic Haplargids

## Typical Pedon

Palacid very gravelly sandy loam, in an area of map unit 146, Parida-Palacid very gravelly sandy loams, 10 to 40 percent slopes; about 4 miles north of Chimayo, New Mexico, along Arroyo Palacio; New Mexico state plane coordinates 1,845,600 north and 588,400 east. NAD 83, UTM 13-39 92370 N; 0443325 E.

A-0 to 4 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark grayish brown (10YR $3 / 2$ ) moist; weak medium granular structure; soft, very friable, nonsticky and slightly plastic; many fine and common very fine roots; common very fine tubular pores; 50 percent gravel and 5 percent cobbles; neutral; abrupt smooth boundary.
AB-4 to 8 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and few fine roots; common very fine tubular pores; 10 percent gravel; slightly alkaline; diffuse wavy boundary.
Bt-8 to 14 inches; brown (7.5YR 4/4) loam, dark brown (7.5YR 3/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and few fine roots; common very fine and few fine tubular pores; few thin clay films on faces of peds and in pores; 10 percent gravel; slightly alkaline; diffuse wavy boundary.
Btk-14 to 45 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; few medium, fine and very fine roots; few fine and common very fine tubular pores; few thin clay films on faces of peds; 10 percent gravel; strongly effervescent; few medium masses of calcium carbonate; moderately alkaline; diffuse smooth boundary.
Bk-45 to 68 inches; pale brown (10YR 6/3) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, moderately sticky and moderately plastic; few medium and fine roots; few fine and common very fine tubular pores; 20 percent gravel; strongly effervescent; few medium irregular masses of calcium carbonate; moderately alkaline.

## Range in Characteristics

A horizon:
Chroma: 2 to 3

Bt horizon:
Hue: 10YR or 7.5YR
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam or clay loam
Rock fragments: 10 to 15 percent gravel
Bk horizon:
Hue: 10YR
Value: 5 or 6 dry and 3 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam or loam
Rock fragments: 15 to 30 percent gravel

## Palon Series

Map unit: 710
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Landform: mountain slopes
Parent material: colluvium derived from rhyolite
Elevation: 8,500 to 10,000 feet ( 2,591 to 3,048 meters)
Slope: 40 to 80 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 40 to 44 degrees F. (4.4 to 6.7 degrees C.)
Frost-free period: 70 to 90 days
Taxonomic class: Loamy-skeletal, mixed, Psammentic Eutroboralfs

## Typical Pedon

Palon very gravelly sandy loam, in an area of map unit 710, Calaveras-Palon very gravelly sandy loams, 40 to 80 percent slopes; about 8 miles north and 5 miles west of Los Alamos, New Mexico state plane coordinates 1,816,100 feet north and 456,400 feet east. NAD 83, UTM 13 - 3983896 N; 0373986 E.

Oi-0 to 1 inch; pine needles
E-1 inch to 16 inches; light gray (10YR 7/2) very gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium granular structure; soft, very friable, non- sticky and nonplastic; common very fine, fine, medium and few coarse roots; many very fine and fine vesicular pores; 40 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
Bt1-16 to 40 inches; light gray (10YR 7/2) very gravelly loamy sand, grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; sandy loam lamellae $1 / 4$ to 1 inch thick and totaling more than 6 inches in thickness; common very fine, fine, few medium and coarse roots; many very fine and fine vesicular pores; 45 percent gravel and 15 percent cobbles; moderately acid; clear wavy boundary.
Bt2—40 to 60 inches; light gray (10YR 7/1) extremely cobbly sandy loam, dark gray (10YR 4/1) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few sandy loam lamellae $1 / 4$ to $1 / 2$ inch thick; few very fine, fine, medium and coarse roots; common very fine and fine vesicular pores; 35 percent gravel and 35 percent cobbles; slightly acid.

## Range in Characteristics

E horizon:
Rock fragments: 35 to 50 percent gravel and 0 to 10 percent cobbles
Bt horizons:
Rock fragments: 35 to 45 percent gravel and 10 to 40 percent cobbles

## Parida Series

Map unit: 146
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in ./hr. (moderately rapid)
Landform: hills
Parent material: slope alluvium and colluvium derived from mixed sources
Elevation: 5,800 to 7,200 feet (1,768 to 2,195 meters)
Slope: 10 to 40 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees $F$. ( 8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Coarse-loamy, mixed, mesic Ustollic Camborthids

## Typical Pedon

Parida very gravelly sandy loam, in an area of map unit 146, Parida-Palacid very gravelly sandy loams, 10 to 40 percent slopes; about 4.5 miles north of Chimayo, New Mexico, along Arroyo Palacio; New Mexico state plane coordinates 1,849,400 north and 585,000 east. NAD 83, UTM 13 - 3993541 N; 0413304 E.

A-0 to 3 inches; dark brown (10YR 3/3) very gravelly sandy loam, very dark grayish brown (10YR $3 / 2$ ) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many fine and very fine roots; common fine interstitial pores; 50 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
Bw1-3 to 12 inches; brown (10YR 4/3) gravelly sandy loam, dark brown (10Y3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common medium, fine and very fine roots; common fine tubular pores; 15 percent gravel; neutral; clear wavy boundary.
Bw2-12 to 28 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few medium, common fine and few very fine roots; common fine tubular pores; 15 percent gravel; neutral; clear wavy boundary;.
Bk-28 to 65 inches; very pale brown (10YR 7/3) gravelly sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few medium and fine roots; few fine tubular pores; 20 percent gravel and 5 percent cobbles; slightly effervescent; calcium carbonate coatings on cobbles and gravel; slightly alkaline.

## Range in Characteristics

Bw horizon:
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 3 or 4
Rock fragments: 15 to 30 percent gravel and 0 to 5 percent cobbles

Bk horizon:
Value: 6 or 7 dry, 5 or 6 moist
Chroma: 3 or 4
Rock fragments: 15 to 30 percent gravel and 0 to 5 percent cobbles

## Pastorius Series

Map unit: 118
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: stream terraces
Parent material: stream alluvium derived from mixed sources
Elevation: 8,000 to 8,700 feet (2,438 to 2,652 meters)
Slope: 1 to 5 percent
Climatic data:
Mean annual precipitation: 18 to 25 inches ( 457 to 635 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Loamy-skeletal, mixed Pachic Argiborolls
Typical Pedon
Pastorius silt loam, in an area of map unit 118, Hesperus-Pastorius-Chamita complex, 0 to 5 percent slopes; 3 miles north and 2.5 miles west of Chama, New Mexico; New Mexico state plane coordinates 2,158,225 feet north and 397,760 feet east.

A-0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium granular structure; slightly hard, friable, slightly sticky and moderately plastic; many very fine and common fine roots; many fine and common very fine interstitial pores; 5 percent cobbles; slightly acid; clear smooth boundary.
BA—5 to 12 inches; dark grayish brown (10YR 4/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and moderately plastic; many very fine and common fine roots; many fine vesicular pores; common thin clay films on faces of peds; 10 percent cobbles; slightly acid; gradual smooth boundary.
Bt1-12 to 20 inches; dark grayish brown (10YR 4/2) cobbly loam, very dark brown (10YR 2/2) moist; weak coarse subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; common fine vesicular pores; many moderately thick clay films on faces of peds; 30 percent cobbles; slightly acid; abrupt wavy boundary.
Bt2-20 to 35 inches; brown (7.5YR 4/4) very cobbly sandy clay loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine vesicular pores; many thick clay films on faces of peds; 15 percent gravel, 30 percent cobbles and 10 percent stones; neutral; gradual wavy boundary.
Bt3-35 to 60 inches; brown (7.5YR 5/4) very cobbly loam, brown (7.5YR 4/4) moist; weak coarse subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few very fine roots; few very fine tubular pores; common moderately thick clay films on faces of peds; 15 percent gravel, 30 percent cobbles, and 10 percent stones; neutral.

## Range in Characteristics

A horizon:
Rock fragments: 0 to 5 percent gravel and 5 to 10 percent cobbles
Bt Horizon:
Rock fragments: 10 to 20 percent gravel and 30 to 40 percent cobbles

## Pena Series

Map unit: 246
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in ./hr. (moderately rapid)
Landform: bajadas and knolls
Parent material: fan alluvium derived from volcanic material
Elevation: 7,100 to 7,800 feet (2,164 to 2,377 meters)
Slope: 2 to 15 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches (330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy-skeletal, mixed, mesic Aridic Calciustolls

## Typical Pedon

Pena gravelly sandy loam, in an area of map unit 246, Pena gravelly sandy loam, 2 to 15 percent slopes; about 0.8 mile north of the Vallecitos and Polvadera road junction, on the Abiquiu land grant; New Mexico state plane coordinates 1,870,700 feet north and 733,000 east. NAD 83, UTM 13 - 4000414 N; 0379211 E.

A1-0 to 2 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; few fine and very fine roots; few fine interstitial pores; 25 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.
A2-2 to 8 inches; dark grayish brown (10YR 4/2) cobbly sandy loam, very dark grayish brown (10YR $3 / 2$ ) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common fine and few very fine and medium roots; few fine vesicular pores; 5 percent gravel and 20 percent cobbles; violently effervescent; moderately alkaline; clear smooth boundary.
Bk1-8 to 17 inches; dark grayish brown (10YR 4/2) very cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine, common fine and medium roots; few fine vesicular pores; 5 percent gravel, 30 percent cobbles and 5 percent stones; strongly effervescent; calcium carbonate coatings on bottom of gravel, cobbles and stones; moderately alkaline; clear smooth boundary.
Bk2-17 to 30 inches; brown (10YR 5/3) very cobbly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine, fine and many medium roots; few fine vesicular pores; 10 percent gravel, 30 percent cobbles and 5 percent stones; violently effervescent; calcium carbonate coatings on bottom of gravel, cobbles and stones; moderately alkaline; clear smooth boundary.

Bk3-30 to 60 inches; pinkish white (7.5YR 8/2) very cobbly sandy loam, light brown (7.5YR 6/4) moist; massive; very hard, very firm, nonsticky and nonplastic; few fine roots; few fine vesicular pores; 5 percent gravel, 35 percent cobbles and 10 percent stones; violently effervescent; thin nearly continuous calcium carbonate coatings on rock fragments; moderately alkaline.

## Range in Characteristics

A horizon:
Rock fragments: 15 to 35 percent
Bk horizons:
Rock fragments: 5 to 15 percent gravel, 25 to 35 percent cobbles, and 0 to 10 percent stones
Texture, fine earth fraction: loam or sandy loam

## Peney Series

Map unit: 108
Depth class: shallow
Drainage class: well drained
Slowest permeability: 0.2 to $0.6 \mathrm{in} . / \mathrm{hr}$. (moderately slow)
Landform: hills
Parent material: slope alluvium derived from limestone
Elevation: 7,100 to 7,800 feet ( 2,164 to 2,377 meters)
Slope: 3 to 20 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy, mixed, mesic Lithic Ustochrepts
Typical Pedon
Peney channery loam, in an area of map unit 108, Peney-Ransect association, 1 to 20 percent slopes; about 2.4 miles south and 2.9 miles west of junction of NM Highway 115 and U.S. Highway 84; 2,000 feet east and 100 feet south of the northwest corner of sec. 31, T.26N., R.4E.

A-0 to 3 inches; brown (10YR 5/3) channery loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine interstitial pores; 20 percent limestone channers; violently effervescent; slightly alkaline; clear smooth boundary.
Bk1-3 to 7 inches; grayish brown (10YR 5/2) silt loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few very fine, fine, and medium roots; few very fine tubular pores; violently effervescent; few large masses of calcium carbonate; slightly alkaline; abrupt smooth boundary.
Bk2—7 to 10 inches; very pale brown (10YR 7/3) silt loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, moderately sticky and slightly plastic; few very fine and medium roots; few very fine tubular pores; violently effervescent; many large masses of calcium carbonates; slightly alkaline; abrupt smooth boundary.
R-10 inches; limestone bedrock.

## Range in Characteristics

Note: Rock fragments in the profile range from 0 to 20 percent channers.
A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Bk horizon:
Value: 4 to 7 dry, 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, clay loam, or silt loam

## R horizon:

Depth to bedrock ranges from 10 to 20 inches.

## Penistaja Series

Map unit: 243
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: fan remnants and mesas
Parent material: eolian deposits and fan alluvium derived from sandstone and shale
Elevation: 6,000 to 6,600 feet ( 1,829 to 2,012 meters)
Slope: 2 to 8 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine-loamy, mixed, mesic Ustollic Haplargids

## Typical Pedon

Penistaja fine sandy loam, map unit 243, Penistaja fine sandy loam, 2 to 8 percent slopes; about 3.4 miles south and 0.7 mile east of Ojo Caliente, New Mexico; 1,320 feet north, and 1,135 feet east of the SW corner of Sec. 6, T.23N., R.9E.

A-0 to 3 inches; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; few very fine interstitial pores; 10 percent gravel; neutral; abrupt smooth boundary.
Bt1-3 to 13 inches; brown (7.5YR 4/4) sandy clay loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; many fine and few very fine roots; common very fine tubular pores; common thin clay films on faces of peds; 5 percent gravel; slightly alkaline; clear smooth boundary.
Bt2—13 to 18 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very common very fine roots; common very fine tubular pores; few thin clay films on faces of peds; 5 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.
Bk-18 to 60 inches; pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; strongly effervescent; calcium carbonate occurs in seams and masses; slightly alkaline.

## Range in Characteristics

A horizon:
Rock fragments: 0 to 15 percent gravel
Bt horizon:
Rock fragments: 0 to 10 percent gravel
Bk Horizon:
Rock fragments: 0 to 10 percent gravel

## Peralta Series

Map unit: 18
Depth class: very deep
Drainage class: somewhat poorly drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: flood plains
Parent material: stream alluvium derived from sandstone
Elevation: 5,500 to 6,100 feet ( 1,676 to 1,859 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Coarse-loamy, mixed, calcareous, mesic Typic Ustifluvents

## Typical Pedon

Peralta loamy fine sand, in an area of map unit 18, Abiquiu-Peralta complex, 0 to 3 percent slopes; about 0.1 mile north and 0.1 mile east of the Arroyo Seco-Rio Grande Junction, New Mexico; 400 feet west and 1,000 feet south of the northeast corner of Sec.15, T.20N., R. 8 E.

A—0 to 4 inches; pale brown (10YR 6/3) loamy fine sand; brown (10YR 5/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and common medium roots; common fine and medium tubular pores; slightly effervescent; slightly alkaline; abrupt wavy boundary.
C1—4 to 18 inches; very pale brown (10YR 7/3) loamy fine sand, brown (10YR 5/3) moist, massive; soft, very friable, slightly sticky and slightly plastic; common medium roots; common medium tubular pores; slightly effervescent; moderately alkaline; clear wavy boundary.
C2—18 to 30 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common medium roots; common fine and medium tubular pores; slightly effervescent; moderately alkaline; abrupt smooth boundary.
C3-30 to 56 inches; very pale brown (10YR 7/3) loamy sand, brown (10YR 5/3) moist; few fine distinct strong brown (7.5YR $5 / 8$ ) mottles; massive; soft, very friable, slightly sticky and slightly plastic; common medium and few coarse roots; few medium tubular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C4—56 to 65 inches; very pale brown (10YR 7/3) coarse sand, brown (10YR 5/3) moist; few medium distinct strong brown (7.5YR 5/8) mottles; loose, nonsticky and nonplastic; few medium and coarse roots; few medium irregular pores; 5 percent gravel; slightly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 3 to 5 moist
Chroma: 3 or 4
C horizons:
Hue: 7.5YR or 10YR
Value: 3 to 7 dry, 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified silt loam, clay loam, very fine sandy loam, coarse sand, loam, sandy clay loam, fine sandy loam, loamy fine sand, and loamy sand
Salinity: EC of 4 to $20 \mathrm{mmhos} / \mathrm{cm}$
Depth to mottles: 12 to 30 inches
Notes: A seasonal water table may occur from April through June.
Rock fragments in the profile range from 0 to 5 percent gravel.
The reaction is slightly alkaline to very strongly alkaline

## Pinavetes Series

Map units: 9, 12, 142
Depth class: very deep
Drainage class: excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Landform: dunes
Parent material: eolian material derived from sandstone
Elevation: 5,600 to 7,000 feet (1,707 to 2,134 meters)
Slope: 0 to 12 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Mixed, mesic Ustic Torripsamments

## Typical Pedon

Pinavetes loamy sand, in an area of map unit 142, Pinavetes loamy sand, 3 to 12 percent slopes; about 3.2 miles south and 0.5 mile east of Duranes, New Mexico; 1,800 feet south and 1,300 feet east of the northwest corner of Sec. 20, T.23N., R.9E.

A-0 to 2 inches; light yellowish brown (10YR 6/4) loamy sand, yellowish brown
(10YR 5/4) moist; weak coarse granular structure; loose, nonsticky and nonplastic; common fine and few medium roots; few fine irregular pores; slightly alkaline; abrupt smooth boundary.
C-2 to 60 inches; light yellowish brown (10YR 6/3) loamy sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine tubular pores; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4

C horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4

## Pinitos Series

Map unit: 40
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: hills
Parent material: slope alluvium derived from sandstone and shale
Elevation: 6,700 to 7,800 feet (2,042 to 2,377 meters)
Slope: 2 to 10 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, mixed, mesic Aridic Haplustalfs

## Typical Pedon

Pinitos fine sandy loam, in an area of map unit 40, Pinitos-Menefee-Vessilla complex, 2 to 20 percent slopes; about 4 miles west and 1 mile south of Lindrith, New Mexico; 100 feet east of the southwest corner of sec. 23, T.24N.,R.3W.

A-0 to 4 inches; brown (7.5YR 5/4) fine sandy loam, dark brown (7.5YR 3/4) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine interstitial pores; neutral; clear smooth boundary.
Bt1—4 to 15 inches; strong brown (7.5YR 4/6) sandy clay loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; hard, friable, moderately sticky and moderately plastic; few fine and medium roots; common fine tubular pores; few thin patchy clay films on faces of peds; neutral; clear smooth boundary.
Bt2—15 to 28 inches; strong brown (7.5YR 5/6) sandy clay loam, strong brown (7.5YR 4/6) moist; weak fine subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few fine and medium roots; common fine tubular pores; few thin clay films on faces of peds; neutral; clear smooth boundary.
C1-28 to 43 inches; strong brown (7.5YR 5/6) sandy clay loam, strong brown (7.5YR 5/6) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine roots; few very fine tubular pores; slightly effervescent; slightly alkaline; gradual smooth boundary.
C2—43 to 60 inches; reddish yellow (7.5YR 6/6) sandy loam, brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; slightly effervescent; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 3 or 4 moist
Chroma: 3 or 4
Bt horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 4 to 6

Chorizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 4 to 6

## Puye Series

Map unit: 302
Depth class: shallow
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in ./hr. (moderately rapid)
Landform: mesas
Parent material: slope alluvium derived from pumice
Elevation: 6,300 to 7,200 feet (1,920 to 2,195 meters)
Slope: 3 to 15 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy, mixed, mesic, shallow Typic Durochrepts

## Typical Pedon

Puye gravelly sandy loam, in an area of map unit 302;; Puye gravelly sandy loam, 3 to 15 percent slopes about 2.5 miles south and 5 miles west of Espanola, New Mexico; New Mexico state plane coordinates 1,804,700 feet north and 520,000 feet east. NAD 83, UTM 13 - 3980174 N; 0393323 E.

A—0 to 3 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; few fine interstitial pores; 20 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.
Bw-3 to 15 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and fine, few medium and coarse roots; common fine tubular pores; 15 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.
Bqm-15 to 16 inches; white indurated duripan, abrupt smooth boundary.
$2 \mathrm{~Bq}-16$ to 33 inches; very pale brown (10YR 7/3) very gravelly loamy sand, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; discontinuous duripans are present; few fine tubular pores; 40 percent gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.
2C-33 to 60 inches; very pale brown (10YR 7/3) very gravelly sand, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; 40 percent gravel; slightly effervescent; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 3 or 4 moist
Chroma: 3 or 4
Rock fragments: 15 to 20 percent, dominantly gravel; cobbles make up no more than 5 percent of the total

Bw horizon:
Value: 6 or 7 dry, 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam and fine sandy loam
Rock fragments: 15 to 35 percent gravel; cobbles make up no more than 5 percent of the total
2Bq and 2C horizons:
Texture, fine earth fraction: loamy sand, sand, or loamy coarse sand
Rock fragments: 35 to 40 percent gravel
Depth to duripan: 10 to 20 inches

## Quimera Series

Map unit: 214
Depth class: shallow
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: hills
Parent material: slope alluvium and colluvium derived from sandstone and shale Elevation: 6,900 to 7,400 feet (2,103 to 2,256 meters)
Slope: 15 to 35 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Clayey, mixed, calcareous, frigid Lithic Ustorthents
Typical Pedon
Quimera very channery clay loam, in an area of map unit 214, Quimera-Vamer very channery clay loams, 10 to 35 percent slopes; about 1.5 miles north of Lumberton, New Mexico, on the Edith road; 1,355 feet east of the southwest corner of section 34, T.32N, R.1W.

A-0 to 3 inches grayish brown (10YR 5/2) very channery clay loam, dark grayish brown (10YR 4/2) moist; moderately fine granular structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial pores; 55 percent channers; neutral; clear smooth boundary.
Bw-3 to 9 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/ 2) moist; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; few medium, fine and very fine roots; common very fine tubular pores; 5 percent channers; slightly effervescent; neutral; clear smooth boundary.
BC—9 to 15 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown 10YR 4/ 2) moist; weak fine subangular blocky structure; hard, fine, slightly sticky and slightly plastic; few medium and fine roots; common very fine tubular pores; 10 percent channers; strongly effervescent; neutral; clear smooth boundary.
C-15 to 17 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/1) moist; massive; hard, firm, moderately sticky and moderately plastic; few medium and fine roots; few very fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.
R-17 inches; hard calcareous sandstone and interbedded shale.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
Rock fragments: 35 to 55 percent channers
Bw horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
Rock fragments: 0 to 15 percent channers
Chorizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 1 or 2
Rock fragments: 0 to 15 percent gravel and channers
Note: Depth to bedrock ranges from 10 to 20 inches.

## Ransect Series

Map unit: 108
Depth class: moderately deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: hills
Parent material: slope alluvium derived from limestone
Elevation: 7,100 to 7,800 feet (2,164 to 2,377 meters)
Slope: 1 to 6 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. ( 7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, carbonatic, mesic Aridic Ustochrepts
Typical Pedon
Ransect silty clay loam, in an area of map unit 108, Peney-Ransect association, 1 to 20 percent slopes; about 2.4 miles south and 2.8 miles west of junction of NM Highway 115 and U.S. Highway 84; New Mexico state plane coordinates 1,983,400 feet north and 410,800 feet east. NAD 83, UTM $13-4035061$ N; 0360747 E.

A-0 to 3 inches; light yellowish brown (10YR 6/4) silty clay loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine roots; few very fine tubular pores; strongly effervescent; slightly alkaline; clear smooth boundary.
Bk1-3 to 16 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; hard, friable, moderately sticky and moderately plastic; common fine and medium roots; few very fine tubular pores; violently effervescent, many rounded masses of calcium carbonate; slightly alkaline; gradual smooth boundary.
Bk2—16 to 24 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; massive; hard, friable, moderately sticky and moderately plastic; few medium roots; few very fine tubular pores; violently effervescent, many rounded masses of calcium carbonate accumulations; slightly alkaline; gradual smooth boundary.

Bk3-24 to 38 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, moderately sticky and moderately plastic; few medium roots; few very fine tubular pores; violently effervescent, many rounded masses of calcium carbonate; slightly alkaline; abrupt smooth boundary.
R-38 inches; limestone bedrock.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Bk horizons:
Value: 5 to 7 dry, 3 to 5 moist
Chroma: 2 to 4
Note: Depth to bedrock ranges from 20 to 40 inches.

## Razito Series

Map unit: 151
Depth class: very deep
Drainage class: somewhat excessively drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Landform: dunes
Parent material: eolian material derived from sandstone
Elevation: 5,500 to 6,500 feet (1,676 to 1,981 meters)
Slope: 1 to 5 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Mixed, mesic Typic Torripsamments

## Typical Pedon

Razito loamy sand, in an area of map unit 151, Razito-Fruitland complex, 1 to 5 percent slopes; about 0.3 mile north and 0.5 mile east of Alcalde, New Mexico; New Mexico state plane coordinates 1,852,600 north and 560,600 feet east. NAD 83, UTM 13 - 3994611 N; 0405882 E.

A-0 to 4 inches; brown (10YR 5/3) loamy sand, brown (10YR 4/3) moist; weak fine granular structure; loose, nonsticky and nonplastic; few very fine and fine roots; few very fine interstitial pores; slightly effervescent; moderately alkaline; abrupt smooth boundary.
C1-4 to 9 inches; yellowish brown (10YR 5/4) loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few very fine vesicular pores; strongly effervescent; moderately alkaline; gradual smooth boundary.
C2—9 to 34 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; few very fine vesicular pores; strongly effervescent; moderately alkaline; gradual smooth boundary.
C3-34 to 60 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; few very fine vesicular pores; strongly effervescent; moderately alkaline.

## Range in Characteristics

Rock fragments: 0 to 5 percent gravel

## Redondo Series

Map unit: 802
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: mountain slopes
Parent material: Residuum derived from tuff
Elevation: 9,400 to 10,800 feet ( 2,865 to 3,292 meters)
Slope: 5 to 25 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Loamy-skeletal, mixed Typic Cryoboralfs
Typical Pedon
Redondo gravelly sandy clay loam, map unit 802, Redondo gravelly sandy clay loam, 5 to 25 percent slopes; about 8.5 miles north and 5 miles west of Los Alamos, New Mexico; New Mexico state plane coordinates 1,818,800 feet north and 457,000 feet east. NAD 83, UTM 13 - 3984717 N; 0374179 E.

Oi-0 to 2 inches; spruce and fir needles
A-2 to 5 inches; light gray (10YR 7/2) gravelly sandy clay loam, grayish brown (10YR 5/2) moist; weak fine subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine, few medium and coarse roots; common very fine and fine vesicular pores; 15 percent gravel; neutral; clear smooth boundary.
E-5 to 16 inches; white (10YR 8/1) gravelly sandy clay loam, light brownish gray (10YR 6/2) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine and fine, few medium and coarse roots; many very fine vesicular and common fine vesicular and tubular pores; 15 percent gravel and 5 percent cobbles; moderately acid; clear smooth boundary.
Bt1-16 to 38 inches; very pale brown (10YR 8/2) very cobbly sandy clay loam, grayish brown (10YR 5/2) moist; moderate fine and medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine, fine, medium and coarse roots; common very fine and fine tubular pores; few thin clay films on faces of peds; 15 percent gravel, 30 percent cobbles and 15 percent stones; moderately acid; gradual wavy boundary.
Bt2-38 to 60 inches; very pale brown (10YR 8/2) extremely stony sandy clay loam, grayish brown (10YR $5 / 2$ ) moist; moderate medium and coarse subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine, fine, medium and coarse roots; few very fine and fine tubular pores; few moderately thick clay films on faces of peds; 10 percent gravel, 15 percent cobbles and 45 percent stones; moderately acid.

## Range in Characteristics

A horizon:
Rock fragments: 15 to 25 percent gravel and 0 to 10 percent cobbles

E horizon:
Rock fragments: 15 to 20 percent gravel and 0 to 10 percent cobbles
Bt horizons:
Rock fragments: 5 to 15 percent gravel, 15 to 45 percent cobbles, and 15 to 45 percent stones

## Rombo Series

Map unit: 127
Depth class: moderately deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: hills
Parent material: slope alluvium and colluvium derived from shale
Elevation: 7,400 to 8,100 feet ( 2,256 to 2,469 meters)
Slope: 5 to 25 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed, frigid Typic Ustochrepts

## Typical Pedon

Rombo clay, in an area of map unit 127, Rombo-Wiggler complex, 5 to 25 percent slopes; about 5 miles south and 1 mile west of Chama, on the Lee Wood Ranch; New Mexico state plane coordinates 2,117,602 feet north and 401,400 feet east. NAD 83, UTM 13 - 4075997 N; 0358415 E.

A-0 to 4 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR $3 / 2$ ) moist; weak fine subangular blocky structure; hard, firm, very sticky and very plastic; common fine and medium roots; few fine tubular pores; neutral; clear smooth boundary.
Bw1-4 to 14 inches; dark grayish brown (2.5Y 4/2) clay, dark grayish brown (2.5Y $4 / 2$ ) moist; weak medium prismatic structure parting to weak coarse subangular blocky structure; very hard, firm, very sticky and very plastic; common fine, medium and few coarse roots; few fine tubular pores; neutral; clear smooth boundary.
Bw2—14 to 21 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; weak medium prismatic structure parting to weak coarse subangular blocky; very hard, firm, very sticky and very plastic; common fine, medium and few coarse roots; few fine tubular pores; strongly effervescent; slightly alkaline; gradual smooth boundary.
Bk-21 to 37 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; massive; very hard, firm, very sticky and very plastic; common medium, fine and few coarse roots; few fine tubular pores; 15 percent soft shale channers; strongly effervescent; few fine masses of calcium carbonate; slightly alkaline; gradual smooth boundary.
$2 \mathrm{Cr}-37$ inches; shale.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, and 2 or 3 moist
Rock fragments: 0 to 15 percent channers

Bw horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 2 or 3
Rock fragments: 0 to 15 percent channers
Note: Depth to a paralithic contact ranges from 20 to 40 inches.

## Roques Series

Map unit: 119
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 001 to .06 in./hr. (very slow)
Landform: alluvial fans
Parent material: fan alluvium derived from shale
Elevation: 7,400 to 8,000 feet (2,256 to 2,438 meters)
Slope: 2 to 8 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed, frigid Typic Ustochrepts

## Typical Pedon

Roques clay loam, in an area of map unit 119, Roques-Nusmag clay loams, 1 to 8 percent slopes; 2.5 miles west and 4.5 miles south of Chama, New Mexico; New Mexico state plane coordinates 2,123,230 feet north and 392,290 feet east. NAD 83, UTM 13 - 4077749 N; 0355661 E.

A—0 to 2 inches; light olive brown (2.5Y 5/4) clay loam, olive brown (2.5Y 4/4) moist; weak fine granular structure; soft, friable, moderately sticky and moderately plastic; few fine roots; few fine interstitial pores; neutral; abrupt smooth boundary.
Bw-2 to 15 inches; light olive brown (2.5Y 5/4) clay, olive brown (2.5Y 4/4) moist; weak coarse prismatic structure parting to weak coarse subangular blocky structure; very hard, firm, very sticky and very plastic; few very fine and fine roots; few fine tubular pores; slightly effervescent; slightly alkaline; gradual smooth boundary.
Bk-15 to 60 inches; light olive brown (2.5Y 5/4) clay, olive brown (2.5Y 4/4) moist; massive; very hard, very firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; strongly effervescent, few fine masses of calcium carbonate; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist Chroma: 2 to 4

Bw horizon:
Value: 5 to 7 dry, 4 or 5 moist Chroma: 2 to 4

Bk horizon:
Value: 5 to 7 dry, 4 or 5 moist
Chroma: 2 to 4

## Rosced Series

Map unit: 145
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} . / \mathrm{hr}$. (moderately rapid)
Landform: hills
Parent material: slope alluvium derived from igneous material
Elevation: 6,500 to 7,500 feet ( 1,981 to 2,286 meters)
Slope: 20 to 50 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy-skeletal, mixed, mesic Aridic Ustochrepts

## Typical Pedon

Rosced very gravelly sandy loam, in an area of map unit 145, Dermala-Rosced complex, 20 to 50 percent; about 5 miles north and 1.5 miles west of Chimayo, New Mexico; New Mexico state plane coordinates 1,850,400 feet north and 606,400 feet east. NAD 83, UTM 13 - 3993762 N; 0419829 E.

A—0 to 5 inches; brown (10YR 4/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common medium roots; common very fine and fine tubular pores; 50 percent gravel and 5 percent cobbles; slightly alkaline; clear smooth boundary.
Bw1-5 to 16 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine, medium and coarse roots; common fine and medium tubular pores; 25 percent gravel and 5 percent cobbles; slightly alkaline, clear smooth boundary.
Bw2-16 to 23 inches; brown (10YR 5/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few medium roots; few medium tubular pores; 35 percent gravel and 10 percent cobbles; strongly effervescent; moderately alkaline; clear smooth boundary.
Bk-23 to 33 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular pores; 35 percent gravel and 5 percent cobbles; strongly effervescent; very few fine masses of calcium carbonate; moderately alkaline; clear smooth boundary.
2C1-33 to 42 inches; yellowish brown (10YR 5/4) very gravelly coarse sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; few fine roots; 35 percent gravel and 5 percent cobbles; slightly effervescent; moderately alkaline; clear smooth boundary.
2C2-42 to 60 inches; brownish yellow (10YR 6/6) very gravelly coarse sand, yellowish brown (10YR 5/6) moist; single grain; loose, nonsticky and nonplastic; few fine roots; 35 percent gravel and 5 percent cobbles; slightly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 4 to 6 dry, 3 or 4 moist
Chroma: 2 to 4
Rock fragments: 40 to 50 percent gravel and 0 to 10 percent cobbles
Bw horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 3 or 4
Rock fragments: 25 to 45 percent gravel and 5 to 10 percent cobbles
Bk and 2 C horizons:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 4 to 6
Rock fragments: 35 to 40 percent gravel and 5 to 10 percent cobbles

## Royosa Series

Map unit: 69
Depth class: very deep
Drainage class: somewhat excessively drained
Slowest permeability: Greater than $20 \mathrm{in} . / \mathrm{hr}$. (very rapid)
Landform: dunes
Parent material: eolian material derived from sandstone
Elevation: 6,600 to 7,300 feet (2,012 to 2,225 meters)
Slope: 2 to 7 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Mixed, mesic Typic Ustipsamments

## Typical Pedon

Royosa sandy loam, in an area of map unit 69, Lindrith-Royosa complex, 2 to 7 percent slopes; about 1.5 miles north and 6 miles west of Lindrith, New Mexico; 2,300 feet south and 900 feet west of the northeast corner of sec. 9, T.24N., R.3W.

A-0 to 2 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; common very fine and fine interstitial pores; slightly effervescent; slightly alkaline; abrupt smooth boundary.
C1-2 to 12 inches; yellowish brown (10YR 5/4) loamy sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and medium roots; few fine vesicular pores; slightly effervescent; slightly alkaline; gradual smooth boundary.
C2-12 to 33 inches; light yellowish brown (10YR 6/4) loamy sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and medium roots; few very fine vesicular pores; slightly effervescent; slightly alkaline; gradual smooth boundary.
C3-33 to 60 inches; yellowish brown (10YR 5/4) loamy sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; slightly effervescent; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
C horizon:
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 3 or 4

## Rusbach Series

Map unit: 803
Depth class: very deep
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in ./hr. (moderately rapid)
Landform: mountain slopes
Parent material: colluvium derived from tuff
Elevation: 8,600 to 10,800 feet (2,621 to 3,292 meters)
Slope: 40 to 80 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Sandy-skeletal, mixed Alfic Cryorthents

## Typical Pedon

Rusbach cobbly sandy loam, in an area of map unit 803, Rusbach cobbly sandy loam, 40 to 80 percent slopes; about 7 miles north and 5 miles west of Los Alamos, New Mexico; New Mexico state plane coordinates 1,810,700 feet north and 457,000 feet east. NAD 83, UTM $13-3982248$ N; 0374148 E .
Oi-0 to 2 inches; pine needles
E1-2 to 16 inches; light gray (10YR 7/2) cobbly sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine and medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine and common medium roots; many very fine and fine vesicular pores; 10 percent gravel and 10 percent cobbles; neutral; clear wavy boundary.
E2-16 to 25 inches; light gray (10YR 7/2) cobbly loamy sand, grayish brown (10YR 5/2) moist; moderate fine granular structure; slightly hard, friable, nonsticky and nonplastic; many very fine, common fine and medium, and few coarse roots; common very fine and fine vesicular pores; 10 percent gravel and 20 percent cobbles; moderately acid; clear wavy boundary.
Bw1-25 to 48 inches; pinkish gray (7.5YR 7/2) very cobbly loamy sand, brown (7.5YR 5/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few thin sandy loam lamellae; common very fine and fine, few medium and coarse roots; common very fine, fine and few medium vesicular pores; 20 percent gravel and 25 percent cobbles; strongly acid; clear wavy boundary.
Bw2-48 to 70 inches; light gray (10YR 7/2) very cobbly loamy sand, brown (10YR $4 / 3$ ) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few thin sandy loam lamellae; common fine and few medium roots; common very fine, fine and few medium vesicular pores; 20 percent gravel and 25 percent cobbles; moderately acid.

## Range in Characteristics

Note: Some pedons have thin A horizons.
E horizon:
Hue: 7.5 YR or 10YR
Value: 7 or 8 dry, 4 to 7 moist
Chroma: 1 to 4
Rock fragments: 15 to 35 percent primarily cobbles
Bw horizon:
Hue: 10YR or 7.5YR
Value: 5 to 8 dry, 4 to 7 moist
Chroma: 2 to 4
Rock fragments: 35 to 70 percent, primarily cobbles

## Ruson Series

Map units: 107, 113
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: stream terraces
Parent material: stream alluvium derived from shale
Elevation: 7,100 to 7,600 feet ( 2,164 to 2,316 meters)
Slope: 1 to 3 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine, mixed, calcareous, mesic Typic Ustorthents
Typical Pedon
Ruson silt loam in an area of map unit 107, Berryman-Ruson association, 1 to 8 percent slopes; east of Berryman Ranch Headquarters; 2,700 feet west and 1,980 feet north from the southeast corner of sec. 34, T. 26 N., R 4 E.

A—0 to 2 inches; light brownish gray (2.5Y 6/2) silt loam, grayish brown (2.5Y 5/2) moist; weak fine granular structure; soft, very friable, moderately sticky and moderately plastic; few very fine and fine roots; few fine interstitial pores; strongly effervescent; moderately alkaline; clear smooth boundary.
C1-2 to 19 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.
C2—19 to 65 inches; grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Hue: 10YR or 2.5 Y
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: silt loam or clay loam

C horizon:
Hue: 10YR or 2.5Y
Value: 5 to 7 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: silty clay, silty clay loam, clay, or clay loam
Note: Rock fragments in the profile range from 0 to 15 percent gravel.

## San Mateo Series

Map units: 10, 30
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: flood plains
Parent material: stream alluvium derived from sandstone and shale
Elevation: 6,000 to 6,900 feet ( 1,829 to 2,103 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine-loamy, mixed, calcareous, mesic Ustic Torrifluvents

## Typical Pedon

San Mateo sandy loam, in an area of map unit 30, San Mateo sandy loam, 0 to 3 percent slopes; 2 miles southeast of Navajo City; 2,345 feet south and 1,980 feet west of the northeast corner of sec. 9, T. 29 N., R. 7 W.

A-0 to 3 inches; brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine interstitial pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C1-3 to 8 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 vesicular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C2—8 to 11 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few very fine and fine vesicular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C3-11 to 15 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 very fine and fine vesicular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C4-15 to 40 inches; brown (10YR 5/3) clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, moderately sticky and moderately plastic; few very fine roots; few very fine and fine tubular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C5-40 to 46 inches; pale brown (10YR 5/3) clay loam, dark grayish brown (10YR 4/2) moist; massive; hard, very firm, moderately sticky and moderately plastic; few very fine roots; few very fine tubular pores; slightly effervescent; moderately alkaline; clear smooth boundary.

C6—46 to 52 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; massive; soft, very friable, moderately sticky and moderately plastic; few very fine roots; few very fine tubular pores; strongly effervescent; strongly alkaline; clear smooth boundary.
C7—52 to 60 inches; brown (10YR 5/3) clay loam, dark grayish brown (10YR 4/2) moist; slightly hard, firm, moderately sticky and moderately plastic; few very fine roots; few very fine tubular pores; strongly effervescent; strongly alkaline.

## Range in Characteristics

Salinity: EC of 4 to $8 \mathrm{mmhos} / \mathrm{cm}$
Reaction: slightly alkaline to strongly alkaline
A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or silty clay loam
C horizon:
Value: 5 or 6 dry and 4 or 5 moist
Texture, fine earth fraction: clay loam or sandy clay loam
Note: Strata of coarser textures may occur above or below the control section or as thin lenses within it. These lenses typically are sandy loam or fine sandy loam.

## Saragote Series

Map unit: 215
Depth class: very deep
Drainage class: somewhat poorly drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: mountain slopes
Parent material: slope alluvium derived from mixed igneous material
Elevation: 9,500 to 11,400 feet (2,896 to 3,475 meters)
Slope: 2 to 5 percent
Climatic data:
Mean annual precipitation: 28 to 35 inches ( 711 to 889 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Clayey-skeletal, mixed Argiaquic Cryoborolls
Typical Pedon
Saragote loam, in an area of map unit 215, Saragote-Ess complex, 2 to 8 percent slopes; about 11 miles east of Tierra Amarilla, New Mexico; New Mexico state plane coordinates 2,077,622 north and 467,958 east. NAD 83, UTM 13 - 4063548 N; 03 78540 E.
$\mathrm{Oi}-0$ to 1 inch; pine needles
A-1 inch to 9 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; few fine distinct strong brown (7.5YR $5 / 8$ ) mottles: moderate coarse granular structure; slightly hard, friable, moderately sticky and slightly plastic; common medium, many fine and very fine roots; common fine interstitial pores; 5 percent cobbles; moderately acid; clear wavy boundary.

Bt1-9 to 15 inches; grayish brown (10YR 5/2) very cobbly clay loam, very dark grayish brown (10YR 3/2) moist; few fine distinct strong brown (7.5YR 5/8) mottles; strong fine subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; common medium, many fine and very fine roots; common fine and few very fine tubular pores; few thin clay films on faces of peds and in pores; 10 percent gravel, 25 percent cobbles; moderately acid; clear wavy boundary.
Bt2—15 to 33 inches; pinkish gray (7.5YR 6/2) very cobbly clay, brown (7.5YR 5/2) moist; common large distinct strong brown (7.5YR $5 / 8$ ) mottles; moderate medium subangular blocky structure; very hard, firm, very sticky and very plastic; few medium, common fine and few very fine roots; common fine and few very fine tubular pores; many moderately thick clay films on faces of peds and in pores; 10 percent gravel and 30 percent cobbles; moderately acid; gradual wavy boundary.
C-33 to 60 inches; light brown (7.5YR 6/4) very cobbly clay, brown (7.5YR 5/4) moist; common large distinct strong brown (7.5YR 5/8) mottles; massive; very hard, firm, very sticky and very plastic; few medium, fine and very fine roots; few fine tubular pores; 10 percent gravel and 30 percent cobbles; moderately acid.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry, 2 or 3 moist
Chroma: 1 or 2
Rock fragments: 0 to 10 percent cobbles
Bt horizon:
Value: 5 or 6 dry, 3 to 5 moist
Rock fragments: 10 to 15 percent gravel and 25 to 40 percent cobbles
C horizon:
Rock fragments: 10 to 15 percent gravel and 25 to 40 percent cobbles
Note: A water table is present within 2 to 3.5 feet of the surface.

## Scholle Series

Map unit: 244
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: stream terraces
Parent material: stream alluvium derived from mixed sources
Elevation: 6,000 to 6,800 feet ( 1,829 to 2,073 meters)
Slope: 1 to 5 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine-loamy, mixed, mesic Ustollic Haplargids

## Typical Pedon

Scholle loam, in an area of map unit 244, Scholle-Silver loams, 1 to 5 percent slopes; about 2.8 miles due east of Forest Service boundary-Rio Chama junction; New Mexico state plane coordinates 1,929,000 feet north and 421,000 feet east. NAD 83, UTM 13 - 4018441 N; 0363641 E.

A-0 to 3 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and many fine roots; few very fine interstitial pores; 5 percent gravel; slightly effervescent; moderately alkaline; abrupt smooth boundary.
BA-3 to 7 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and many very fine roots; few very fine and fine tubular pores; 5 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
Btk1—7 to 17 inches; light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and many fine roots; few very fine and fine irregular pores; common thin clay films on faces of peds and in pores; strongly effervescent; few fine irregular and rounded masses of calcium carbonates; 10 percent gravel; moderately alkaline; clear smooth boundary.
Btk2-17 to 24 inches; light brown (7.5YR 6/4) gravelly clay loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; many very fine and fine roots; few very fine and fine irregular pores; common thin clay films on faces of peds; strongly effervescent; common medium rounded masses of calcium carbonate; 15 percent gravel and 5 percent cobbles; moderately alkaline; clear wavy boundary.
Bk1-24 to 30 inches; reddish yellow (7.5YR 8/6) gravelly sandy clay loam, reddish yellow (7.5YR 7/6) moist; massive; slightly hard, friable; slightly sticky and slightly plastic; few very fine and fine roots; few very fine discontinuous irregular pores; 20 percent gravel and 10 percent cobbles; violently effervescent; common medium rounded masses of calcium carbonate; moderately alkaline; gradual wavy boundary.
Bk2—30 to 60 inches; pink (7.5YR 8/4) very gravelly sandy loam, pink (7.5YR 7/4) moist; massive; slightly hard, friable; common fine and very fine roots; few very fine and fine irregular pores; 30 percent gravel and 15 percent cobbles; violently effervescent; disseminated calcium carbonate; moderately alkaline.

## Range in Characteristics

A and BA horizons:
Value: 4 or 5 dry and 3 or 4 moist
Rock fragments: 0 to 10 percent gravel
Btk horizon:
Value: 5 or 6 dry and 3 to 5 moist
Rock fragments: 10 to 30 percent gravel and 0 to 5 percent cobbles
Bk horizon:
Value: 7 or 8 dry, 6 or 7 moist
Rock fragments: 20 to 35 percent gravel and 10 to 20 percent cobbles

## Sedillo Series

Map units: 170, 190
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: stream terraces
Parent material: stream alluvium derived from mixed sources
Elevation: 6,500 to 7,200 feet (1,981 to 2,195 meters)
Slope: 0 to 5 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Loamy-skeletal, mixed, mesic Ustollic Haplargids

## Typical Pedon

Sedillo loam, in an area of map unit 190, Sedillo loam, 0 to 3 percent slopes; about 0.5 mile south of El Rito, New Mexico; New Mexico state plane coordinates 1,941,000 feet north and 518,600 feet east. NAD 83, UTM $13-4021714$ N; 0393431 E.

A—0 to 5 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium platy structure; hard, friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; few very fine tubular pores; 5 percent gravel and 5 percent cobbles; moderately alkaline; abrupt smooth boundary.
Bt—5 to 13 inches; brown (7.5YR 5/4) cobbly sandy clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; few medium, common fine and very fine roots; common very fine and few fine vesicular pores; few thin clay films on faces of peds and in pores; 10 percent gravel and 20 percent cobbles; slightly alkaline; clear smooth boundary.
Btk-13 to 25 inches; strong brown (7.5YR 5/6) very cobbly sandy clay loam, strong brown (7.5YR 4/6) moist; moderate medium subangular blocky structure; very hard, firm, moderately sticky and moderately plastic; few medium, common fine and very fine roots; common very fine and few fine vesicular pores; few thin clay films on faces of peds and in pores; 15 percent gravel, 20 percent cobbles and 5 percent stones; strongly effervescent; common rounded masses and seams of segregated calcium carbonate; moderately alkaline; clear wavy boundary.
Bk-25 to 60 inches; pinkish white (7.5YR 8/2) very cobbly sandy loam, pinkish gray (7.5YR 7/2) moist; massive; hard, firm, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 25 percent gravel, 20 percent cobbles and 15 percent stones; violently effervescent; disseminated calcium carbonate; moderately alkaline.

## Range in Characteristics

A horizon:
Hue: 10YR or 7.5YR
Value: 4 or 5 dry
Chroma: 3 or 4
Rock fragments: 5 to 10 percent gravel and 5 to 25 percent cobbles
Bt horizon:
Rock fragments: 10 to 20 percent gravel and 20 to 35 percent cobbles
Bk horizon:
Rock fragments: 15 to 25 percent gravel, 20 to 30 percent cobbles, and 5 to 15 percent stones

## Silver Series

Map units: 244, 248
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: fan remnants and stream terraces

Parent material: fan and stream alluvium derived from sandstone and shale
Elevation: 6,000 to 6,900 feet ( 1,829 to 2,103 meters)
Slope: 1 to 7 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. ( 8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine, mixed, mesic Ustollic Haplargids
Typical Pedon
Silver loam, in an area of map unit 244, Scholle-Silver loams, 1 to 5 percent slopes; about 0.6 mile north and 3 miles east of the junction of the Forest Service boundary and the Rio Chama; New Mexico state plane coordinates 1,932,300 north feet and 423,200 east feet. NAD 83, UTM 13 - 4019438 N; 0364324 E.

A—0 to 2 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; common very fine, fine and few medium roots; few very fine and fine irregular pores; moderately alkaline; abrupt smooth boundary.
Bt-2 to 10 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 3/4) moist; moderate fine subangular blocky structure; hard, firm, very sticky and very plastic; common very fine, fine and few medium roots; common very fine tubular pores; common thin clay films on faces of peds and in pores; moderately alkaline; clear smooth boundary.
Btk1-10 to 22 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and fine roots; many very fine tubular pores; common thin clay films on faces of peds and in pores; strongly effervescent; few medium rounded masses of calcium carbonate; 5 percent gravel; moderately alkaline; abrupt smooth boundary.
Btk2-22 to 34 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate coarse subangular blocky structure; hard, firm, moderately sticky and moderately plastic; common very fine and few fine roots; common very fine tubular pores; common thin clay films on faces of peds and in pores; strongly effervescent; common large rounded masses of calcium carbonate; 5 percent gravel; moderately alkaline; clear smooth boundary.
Bk-34 to 48 inches; light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 5/4) moist; massive; hard, firm, moderately sticky and moderately plastic; common very fine and few fine roots; few very fine tubular pores; strongly effervescent; few fine rounded and irregular masses of calcium carbonate; 5 percent gravel; strongly alkaline; clear smooth boundary.
C-48 to 60 inches; light brown (7.5YR 6/4) cobbly sandy clay loam, brown (7.5YR 5/4) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine roots; common very fine tubular pores; 5 percent gravel and 20 percent cobbles; strongly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Hue: 7.5YR or 10YR
Value: 5 or 6 dry and 3 to 5 moist
Texture, fine earth fraction: loam or fine sandy loam

Bt horizon:
Value: 5 or 6 dry, 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or clay
Rock fragments: 0 to 10 percent gravel
Bk horizon:
Value: 5 or 6 dry, 5 or 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam, sandy clay loam, or clay
Rock fragments: 0 to 10 percent gravel
C horizon:
Value: 5 to 7 dry, 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam, clay, and sandy clay loam
Rock fragments: 0 to 5 percent gravel and 10 to 20 percent cobbles

## Sparank Series

Map unit: 10
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 001 to .06 in./hr. (very slow)
Landform: flood plains
Parent material: stream alluvium derived from sandstone and shale
Elevation: 6,000 to 6,900 feet (1,829 to 2,103 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches (254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine, mixed, calcareous, mesic Ustic Torrifluvents
Typical Pedon
Sparank silt loam, in an area of map unit 10, Sparank-San Mateo silt loams, saline, sodic, 0 to 3 percent slopes; 14.8 miles north of Councelor Trading Post in Largo Canyon, 2,000 feet north and 2,000 feet east of the southwest corner of sec. 16, T. 25 N., R. 6 W.

A—0 to 2 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine interstitial pores; slightly effervescent; strongly alkaline; clear smooth boundary.
2Cn-2 to 60 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; massive; very hard, very firm, moderately sticky and moderately plastic; few very fine roots; few very fine tubular pores; slightly effervescent; very strongly alkaline.

## Range in Characteristics

Salinity: EC of 4 to 8 mmhos/cm
Sodicity: SAR of 13 to 30

## Sparham Series

Map units: 60, 70
Depth class: very deep
Drainage class: well drained
Slowest permeability: .001 to .06 in ./hr. (very slow)
Landform: flood plains and stream terraces
Parent material: stream alluvium derived from shale
Elevation: 5,500 to 7,200 feet ( 1,676 to 2,195 meters)
Slope: 0 to 3 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 50 degrees F. (7.2 to 10.0 degrees C.)
Frost-free period: 100 to 140 days
Taxonomic class: Fine, mixed, calcareous, mesic Typic Ustifluvents
Typical Pedon
Sparham clay loam, in an area of map unit 70, Sparham clay loam, saline, sodic, 0 to 3 percent slopes; about 3.3 miles south and 0.7 mile east of Llaves, Rio Arriba County, New Mexico; 2,550 feet south and 1,530 feet west of the northeast corner of sec. 8, T. 24. N., R. 1 E.

A-0 to 2 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; weak fine granular structure; very hard, fine, moderately sticky and moderately plastic; few very fine roots; few very fine interstitial pores; slightly effervescent; strongly alkaline; abrupt smooth boundary.
C1-2 to 25 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; massive; very hard, very firm, very sticky and very plastic; common very fine roots; common very fine tubular pores; slightly effervescent; strongly alkaline; clear smooth boundary.
C2-25 to 35 inches; pale yellow (2.5Y 7/4) clay loam, light olive brown (2.5Y 5/4) moist; massive; hard, firm, moderately sticky and moderately plastic; few very fine roots; common very fine tubular pores; slightly alkaline; gradual smooth boundary.
C3-35 to 60 inches; light gray ( $2.5 \mathrm{Y} 7 / 2$ ) clay, light yellowish brown ( $2.5 \mathrm{Y} 6 / 4$ ) moist; massive; very hard, very firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; slightly effervescent; strongly alkaline.

## Range in Characteristics

Salinity: EC of 2 to $20 \mathrm{mmhos} / \mathrm{cm}$
Sodicity: SAR of 5 to 30
A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam or silty clay loam
Chorizon:
Hue: 10YR or 2.5 Y
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam, clay, silty clay, or silty clay loam. Stratified layers of sandy clay or sandy loam also are present below 40 inches.

Note: Rock fragments in the profile range from 0 to 15 percent gravel.

## Stout Series

Map units: 50, 132
Depth class: shallow
Drainage class: well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} . / \mathrm{hr}$. (moderately rapid)
Landform: hills
Parent material: slope alluvium and residuum derived from sandstone
Elevation: 7,200 to 8,300 feet (2,195 to 2,530 meters)
Slope: 5 to 20 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Loamy, mixed, nonacid, frigid Lithic Ustorthents
Typical Pedon
Stout sandy loam, in an area of map unit 50, Stout-Kunz sandy loams, 5 to 15 percent slopes; 9.3 miles north and 1.6 miles east of Lindrith; 2,150 feet north and 1,800 feet west of the southeast corner of sec. 35, T. 26 N., R. 2 W.
$\mathrm{Oi}-0$ to 2 inches; pine needles
A—2 to 5 inches; brown (7.5YR 4/4) sandy loam, dark brown (7.5YR 3/4) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; few fine roots; few fine interstitial pores; neutral; abrupt smooth boundary.
C-5 to 11 inches; brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; massive; hard, friable, moderately sticky and moderately plastic; few fine and medium roots; few very fine and common fine vesicular pores; 10 percent channers; neutral; abrupt smooth boundary.
Cr-11 to 14 inches; soft sandstone.
R-14 inches; sandstone.

## Range in Characteristics

A horizon:
Value: 4 to 6 dry, 3 to 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or loam
Rock fragments: Sandstone channers on the surface range from 0 to 10 percent and flagstones from 0 to 20 percent

C horizon:
Texture, fine earth fraction: sandy loam or loam
Rock fragments: 0 to 15 percent sandstone channers
Depth to lithic contact: 10 to 20 inches

## Suposo Series

Map unit: 228
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: stream terraces
Parent material: stream alluvium derived from shale
Elevation: 6,900 to 7,400 feet (2,103 to 2,256 meters)

Slope: 1 to 6 percent

## Climatic data:

Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed Pachic Argiborolls

## Typical Pedon

Suposo clay loam, in an area of map unit 228, Suposo-Brycan complex, 1 to 6 percent slopes; about 2 miles north of Lumberton; New Mexico state plane coordinates 2,168,928 feet north and 300,200 feet east. NAD 83, UTM 13 - 4092 044 N; 0327778 E.

A-0 to 4 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR $3 / 2$ ) moist; moderate fine granular structure; soft, very friable, moderately sticky and moderately plastic; common very fine, fine and few medium roots; few fine tubular pores; neutral; clear smooth boundary.
Bt-4 to 16 inches; grayish brown (10YR 5/2) clay, very dark grayish brown (10YR 3/2) moist; moderate fine angular blocky structure; hard, firm, moderately sticky and moderately plastic; many very fine, fine and common medium roots; few thin clay films on faces of peds; neutral; clear smooth boundary.
Btk-16 to 31 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure; very hard, very firm, very sticky and very plastic; common very fine, few fine and medium roots; few thin clay films on faces of peds; strongly effervescent; thin filaments and threads of segregated calcium carbonate; slightly alkaline; clear smooth boundary.
BCk-31 to 60 inches; brown (10YR 5/2) clay, dark brown (10YR 3/2) moist; weak medium prismatic structure; very hard, very firm, very sticky and very plastic; few very fine, fine and medium roots; strongly effervescent; thin filaments and threads of segregated calcium carbonate; slightly alkaline.

## Range in Characteristics

A horizon:
Hue: 10YR or 2.5 Y
Value: 4 or 5 dry, 1 to 3 moist
Chroma: 2 or 3
Bt horizon:
Hue: 10YR or 2.5 Y
Value: 3 to 5 dry, 1 or 3 moist
Chroma: 2 or 3
Btk and BCk horizons (includes a Bk in some pedons):
Hue: 10YR or 2.5Y
Value: 4 through 6 dry, 3 through 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: clay or clay loam

## Teromote Series

Map unit: 113
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: alluvial fans

Parent material: fan alluvium derived from shale
Elevation: 7,100 to 7,400 feet (2,164 to 2,256 meters)
Slope: 2 to 8 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Fine-loamy, mixed, mesic Aridic Ustochrepts
Typical Pedon
Teromote loam, in an area of map unit 113, Teromote-Ruson association, 1 to 8 percent slopes; about 0.6 mile south and 6 miles west of Cebolla, New Mexico; 1,198 feet north and 1,407 feet west of the southeast corner of sec. 33, T. 27 N., R. 3E.

A-0 to 2 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine and fine interstitial pores; strongly effervescent; slightly alkaline; clear smooth boundary.
Bw-2 to 12 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; violently effervescent; slightly alkaline; clear smooth boundary.
Bk-12 to 65 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; violently effervescent, few fine calcium carbonate masses; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 4 to 6 dry, 4 or 5 moist
Chroma: 3 or 4
Bw horizon:
Hue: 10YR or 2.5Y
Value: 4 to 7 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, clay loam, or sandy clay loam
Bk horizon:
Hue: 10YR or 2.5Y
Value: 4 to 7 dry, 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, silty clay loam, or clay loam
C horizon (present in some pedons):
Hue: 10YR or 2.5 Y
Value: 4 to 7 dry or moist
Chroma: 2 to 4 dry or moist
Texture, fine earth fraction: fine sandy loam or clay loam

## Tinaja Series

Map unit: 242
Depth class: very deep
Drainage class: well drained

Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Landform: escarpments
Parent material: colluvium derived from sandstone
Elevation: 5,800 to 7,800 feet (1,768 to 2,377 meters)
Slope: 45 to 75 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy-skeletal, mixed, mesic Aridic Ustochrepts

## Typical Pedon

Tinaja extremely gravelly loam, in an area of map unit 242, Tinaja-Rock outcrop complex, 45 to 75 percent slopes; about 1.7 miles south and 0.3 mile west of Abiquiu, New Mexico; New Mexico state plane coordinates 1,885,660 feet north and 477,600 feet east. NAD 83, UTM 13 - 4005011 N; 0380719 E.

A—0 to 4 inches; brown (7.5YR 5/4) extremely gravelly loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; few very fine interstitial pores; 40 percent gravel, 20 percent cobbles, and 10 percent stones; slightly alkaline; clear smooth boundary.
Bk1—4 to 43 inches; light brown (7.5YR 6/4) very cobbly sandy clay loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few medium, common fine and very fine roots; few very fine tubular pores; 20 percent gravel, 20 percent cobbles and 5 percent stone; strongly effervescent; thin calcium carbonate coatings on bottom of gravel, cobbles and stones; slightly alkaline; clear smooth boundary.
2Bk2—43 to 60 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common fine, few medium and very fine roots; few very fine tubular pores; 10 percent gravel; strongly effervescent; thin calcium carbonate coatings on bottom of gravel; slightly alkaline.

Range in Characteristics
A horizon:
Rock fragments: 40 to 50 percent gravel, 10 to 20 percent cobbles, and 10 to 15 percent stones

Bk horizon:
Rock fragments: 20 to 25 percent gravel, 20 to 30 percent cobbles, and 5 to 10 percent stones

2Bk horizon:
Rock fragments: 0 to 10 percent gravel

## Topetaul Series

Map unit: 130
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: cuestas
Parent material: slope alluvium and colluvium derived from shale
Elevation: 7,500 to 8,200 feet (2,286 to 2,499 meters)

Slope: 3 to 25 percent

## Climatic data:

Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Clayey-skeletal, mixed Mollic Eutroboralfs

## Typical Pedon

Topetaul cobbly silt loam, in an area of map unit 130, Topetaul-Hogg complex, 3 to 25 percent slopes; about 3 miles northeast of Cebolla, New Mexico; I,930 feet west and $\mathrm{I}, 760$ feet south of northeast corner of Section 13, T.27N., R.4E.

A-0 to 6 inches; dark grayish brown (10YR 4/2) cobbly silt loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine, fine, coarse, and few medium roots; few very fine and common fine vesicular pores; 10 percent gravel and 15 percent cobbles; neutral; abrupt wavy boundary.
BA—6 to 13 inches; light brown (7.5YR 6/4) very cobbly silt loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine, medium and coarse and many very fine roots; few very fine and common fine tubular pores; 20 percent gravel and 30 percent cobbles; slightly acid; abrupt irregular boundary.
2Bt1-13 to 28 inches; strong brown (7.5YR 5/6) very gravelly clay, strong brown (7.5YR 4/6) moist; strong fine and medium subangular blocky structure; very hard, firm, very sticky and moderately plastic; common very fine, medium and many fine roots; few very fine and common fine tubular pores; common thick clay films on faces of peds; 40 percent gravel and 20 percent cobbles; slightly acid; clear wavy boundary.
2Bt2-28 to 45 inches; strong brown (7.5YR 4/6) extremely cobbly clay, strong brown (7.5YR 4/6) moist; strong fine subangular blocky structure; extremely hard, firm, very sticky and very plastic; few very fine, medium and common fine roots; few very fine and common fine tubular pores; common moderately thick clay films on faces of peds; 30 percent gravel and 35 percent cobbles; slightly acid; gradual wavy boundary.
2Bt3-45 to 60 inches; reddish yellow (7.5YR 6/6) extremely cobbly clay, strong brown (7.5YR 5/6) moist; moderate fine subangular blocky structure; extremely hard, firm, very sticky and very plastic; few fine and very fine roots; few very fine tubular pores; common thin clay films on faces of peds; 25 percent gravel and 40 percent cobbles; slightly acid.

## Range in Characteristics

A horizon:
Hue: 7.5YR or 10YR
Value: 4 or 5 dry, 2 to 4 moist
Chroma: 2 or 3
Rock fragments: 0 to 10 percent gravel and 15 to 25 percent cobbles
BA horizon:
Hue: 7.5YR or 10YR
Value: 4 to 6 dry, 3 or 4 moist
Chroma: 2 to 4
Rock fragments: 10 to 25 percent gravel and 25 to 35 percent cobbles

Bt horizon:
Value: 4 to 6 dry, 3 to 6 moist
Chroma: 4 or 6
Rock fragments: 25 to 45 percent gravel and 5 to 45 percent cobbles

## Totavi Series

Map unit: 407
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in ./hr. (moderate)
Landform: summits of mesas
Parent material: slope alluvium derived from tuff
Elevation: 6,800 to 8,000 feet (2,073 to 2,438 meters)
Slope: 1 to 8 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Ashy, frigid Typic Ustivitrands
Typical Pedon
Totavi gravelly loam, in an area of map unit 407, Totavi gravelly loam, 1 to 8 percent slopes; about 0.5 mile north and 1.25 miles west of the entrance to Puye cliffs; New Mexico state plane coordinates 1,810,300 feet north and 499, 000 feet east. NAD 83, UTM 13 - 3981962 N; 0386945 E.

Oi-0 to 3 inches; pine needles
A-3 to 6 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and nonplastic; few very fine and fine roots; many very fine and common fine vesicular pores; 15 percent pumice gravel; slightly acid; clear smooth boundary.
Bw-6 to 28 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR $3 / 2$ ) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium, few very fine and coarse roots; many very fine and few fine vesicular pores; 10 percent pumice gravel; neutral; gradual smooth boundary.
C1-28 to 49 inches; light brownish gray (10YR 6/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few very fine, fine and medium roots; many very fine and few fine vesicular pores; 20 percent pumice gravel; neutral; gradual smooth boundary.
C2-49 to 60 inches; light gray (10YR 7/2) gravelly loamy sand, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and few roots; fine vesicular pores; 20 percent pumice gravel; neutral.

## Range in Characteristics

Bw and C horizons:
Value: 5 or 7 dry, 3 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or loamy sand that consist of 60 percent or more sand-sized volcanic material
Rock fragments: 5 to 20 percent pumice gravel

## Tottles Series

Map unit: 129
Depth class: very deep
Drainage class: poorly drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: stream terraces
Parent material: stream alluvium derived from shale
Elevation: 7,400 to 8,000 feet (2,256 to 2,438 meters)
Slope: 0 to 2 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Fine, mixed, calcareous, frigid Cumulic Haplaquolls

## Typical Pedon

Tottles clay loam, in an area of map unit 129, Nusmag-Tottles clay loams, 0 to 3 percent slopes; about 8.3 miles west and 2.0 miles south of Chama on the Humphries Wildlife Area, New Mexico; New Mexico state plane coordinates 2,134,200 feet north and 359,370 feet east. NAD 83, UTM $13-4081223$ N; 0345673 E.

A1-0 to 6 inches; dark gray (10YR 3/1) clay loam, very dark gray (10YR 3/I/1) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.
A2—6 to 21 inches; dark gray (10YR 4/1) clay, black (10YR 2/1) moist; few fine distinct yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.
A3-21 to 36 inches; black ( $\mathrm{N} 2 / 0$ ) clay, black ( $\mathrm{N} 2 / 0$ ) moist; few fine distinct yellowish brown (10YR 5/6) mottles; weak subangular blocky structure; hard, very firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.
Cg1—36 to 54 inches; black ( $\mathrm{N} 4 / 1$ ) clay, black ( $\mathrm{N} 4 / 1$ ) moist; common to many medium distinct yellowish brown (10YR 5/8) mottles; massive; very hard, very firm, moderately sticky and moderately plastic; few very fine and fine roots; few fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.
Cg2—54 to 60 inches; dark gray (10YR 4/ /1) clay, dark gray (10YR 4/ 1) moist; common medium distinct yellowish brown (10YR 5/8) mottles; massive; very hard, very firm, moderately sticky and moderately plastic; few very fine and fine roots; few very fine tubular pores; strongly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 3 or 4 dry, 2 or 3 moist
Chroma: 1 or 2
Cg horizon:
Value: 2 to 5 dry, 2 or 4 moist
Chroma: 0 to 2

Note: A water table may occur, saturated at or near the surface for at least one month during most years, mainly during early spring. In late summer the water table drops to a depth of 12 to 36 inches.

## Vamer Series

Map units: 141, 214
Depth class: shallow
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: breaks and hills
Parent material: slope alluvium and colluvium derived from sandstone and shale
Elevation: 6,900 to 7,500 feet (2,103 to 2,286 meters)
Slope: 10 to 35 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches (406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Clayey, mixed Lithic Eutroboralfs
Typical Pedon
Vamer very channery clay loam, in an area of map unit 214, Quimera-Vamer very channery clay loams, 10 to 35 percent slopes; about 4.3 miles north of Lumberton, New Mexico on the Edith road; 2605 feet east and 521 feet north of the southwest corner of Section 28, T.32N, R.1W.

A-0 to 3 inches; grayish brown (10YR 5/2) very channery clay loam, dark grayish brown (10YR 4/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine interstitial pores; 40 percent sandstone channers; neutral; clear smooth boundary.
Bt1-3 to 8 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; moderate medium subangular blocky structure; very hard, very firm, very sticky and very plastic, common very fine and fine roots; common very fine and fine tubular pores; few thin clay films on faces of peds; neutral; clear smooth boundary.
Bt2—8 to 19 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; weak medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few very fine and fine roots; few very fine and fine tubular pores; few thin clay films on faces of peds; strongly effervescent; neutral; clear smooth boundary.
R-19 inches; shale and sandstone bedrock.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 3 or 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or loam
Rock fragments: 0 to 60 percent channers
Bt horizons:
Value: 4 or 5 dry or moist
Chroma: 2 to 4
Texture, fine earth fraction: clay, clay loam, and silty clay loam
Depth to a lithic contact: 10 to 20 inches
Rock fragments: 0 to 15 percent channers

## Vessilla Series

Map units: 20, 40, 110, 220
Depth class: shallow
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Landform: breaks, hills and mesas
Parent material: slope alluvium over residuum derived from sandstone
Elevation: 6,100 to 7,800 feet ( 1,859 to 2,377 meters)
Slope: 1 to 45 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy, mixed, calcareous, mesic Lithic Ustorthents
Typical Pedon
Vessilla sandy loam, in an area of map unit 110, Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes; 2 miles northwest of Lybrook, New Mexico; 2,084 feet south, 521 feet east of the northwest corner of Sec. 1, T. 23 N., R. 7W.

A-0 to 1 inch; pale brown (10YR 6/3) sandy loam, brown (10YR $5 / 3$ ) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine interstitial pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C1-1 inch to 5 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine vesicular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C2—5 to 15 inches; brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine vesicular pores; slightly effervescent; moderately alkaline; abrupt smooth boundary.
R-15 inches; sandstone bedrock.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam or sandy loam
C horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam or sandy loam
Depth to sandstone bedrock: 10 to 20 inches

## Walrees Series

Map unit: 42
Depth class: very deep
Drainage class: somewhat poorly drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: swales

Parent material: stream alluvium derived from cobbly material, sandstone and shale Elevation: 5,500 to 6,000 feet (1,676 to 1,829 meters)
Slope: 0 to 2 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. (10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, calcareous, mesic Aquic Ustifluvents

## Typical Pedon

Walrees clay loam, in an area of map unit 42, Walrees-Abiquiu complex, 0 to 2 percent slopes; about 1 mile north and 0.1 mile west of Fairview, New Mexico; New Mexico state plane coordinates $1,827,600$ feet north and $5,530,000$ feet east. NAD 83, UTM 13 - 3987113 N; 0396459 E.

A-0 to 4 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak medium platy structure parting to weak fine granular; very hard, firm, moderately sticky and moderately plastic; common very fine, fine and medium roots, few fine and medium interstitial pores; strongly effervescent; moderately alkaline clear smooth boundary.
C1—4 to 23 inches; grayish brown (10YR 5/2) silty clay loam, dark grayish brown (10YR 4/2) moist; few fine distinct strong brown (7.5YR 5/6) mottles; massive; very hard, firm, moderately sticky and moderately plastic; common very fine, fine and medium roots; few fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.
2C2—23 to 28 inches; grayish brown (10YR 5/2) sand, dark grayish brown (10YR 4/2) moist; few fine distinct strong brown (7.5YR 5/6) mottles; massive; loose, nonsticky and nonplastic; common very fine and fine roots; strongly effervescent; moderately alkaline; abrupt smooth boundary.
2C3-28 to 60 inches; stratified sands, gravel and cobbles.

## Range in Characteristics

Note: A seasonal high water table may occur at a depth of 25 to 40 inches during the spring runoff period of April through June, and floods occasionally.

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
C and 2C horizons:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
Note: Depth to the 2C horizons range from 20 to 40 inches.

## Wauquie Series

Map unit: 140
Depth class: very deep
Drainage class: well drained
Slowest permeability: 0.6 to $2.0 \mathrm{in} . / \mathrm{hr}$. (moderate)
Landform: escarpments

Parent material: slope alluvium derived from shale over colluvium derived from granite
Elevation: 6,000 to 7,000 feet (1,829 to 2,134 meters)
Slope: 35 to 60 percent
Climatic data:
Mean annual precipitation: 13 to 16 inches ( 330 to 406 millimeters)
Mean annual air temperature: 45 to 49 degrees F. (7.2 to 9.4 degrees C.)
Frost-free period: 100 to 130 days
Taxonomic class: Loamy-skeletal, mixed, mesic Aridic Haplustalfs

## Typical Pedon

Wauquie very gravelly loam, in an area of map unit 140, Espiritu-Wauquie association, 35 to 60 percent slopes; 3 miles south and 0.5 mile east of Chili, New Mexico; New Mexico state plane coordinates 1,839,100 feet north and 532,800 east. NAD 83, UTM 13 - 3990606 N; 0397358 E.

A-0 to 3 inches; brown (7.5YR 4/4) very gravelly loam, dark brown (7.5YR 3/2) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; few fine and many medium and coarse roots; common very fine interstitial pores; 40 percent gravel, 10 percent cobbles and 5 percent stones; neutral; abrupt smooth boundary.
Bt1-3 to 13 inches; brown (7.5YR 4/4) very gravelly sandy clay loam, dark brown (7.5YR 3/2) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; many very fine, common fine, medium and coarse roots; common very fine tubular pores; common thin clay films on faces of peds and in pores; 40 percent gravel, 10 percent cobbles and 5 percent stones; slightly alkaline; clear smooth boundary.
Bt2-13 to 19 inches; brown (7.5YR 5/4) extremely cobbly sandy clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common fine, medium and few coarse roots; common very fine and fine tubular pores; common thin clay films on faces of peds; 30 percent gravel, 25 percent cobbles and 5 percent stones; slightly alkaline; clear smooth boundary.
Bk1—19 to 42 inches; light brown (7.5YR 6/4) very cobbly loam, brown (7.5YR 5/4)
moist; massive; slightly hard, firm, slightly sticky and slightly plastic; few very fine, common fine and few medium roots; few very fine and fine tubular pores; 25 percent gravel, 25 percent cobbles and 5 percent stones; slightly effervescent, few calcium carbonate coatings on undersides of gravel, cobbles and stones; slightly alkaline; gradual smooth boundary.
Bk2—42 to 60 inches; pink (7.5YR 7/4) very cobbly sandy loam, light brown (7.5YR 6/4) moist; massive; slightly hard, firm, nonsticky and nonplastic; few fine and medium roots; few very fine continuous tubular pores; 20 percent gravel, 30 percent cobbles and 5 percent stones; effervescent, few masses and common calcium carbonate coatings on undersides of gravel, cobbles and stones; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 2 to 4
Rock fragments: 35 to 45 percent gravel, 5 to 10 percent cobbles, and 0 to 5 percent stones

Bt horizon:
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 2 to 4
Rock fragments: 20 to 45 percent gravel, 10 to 30 percent cobbles, and 0 to 5 percent stones
Bk horizon:
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 4 or 5
Rock fragments: 20 to 30 percent gravel, 20 to 30 percent cobbles, and 0 to 5 percent stones

## Wenota Series

Map unit: 247
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: flood plains
Parent material: stream alluvium derived from sandstone and shale
Elevation: 6,000 to 6,800 feet ( 1,829 to 2,073 meters)
Slope: 1 to 6 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 50 degrees F. (8.9 to 10.0 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Fine, mixed, calcareous, mesic Ustic Torrifluvents
Typical Pedon
Wenota silty clay loam, in an area of map unit 247, Wenota silty clay loam, 1 to 6 percent slopes; about 1.5 miles west and 0.4 mile south of Ghost Ranch Visitor Center, New Mexico; New Mexico state plane coordinates 1,934,200 feet north and 416,700 feet east. NAD 83, UTM 13 - 4020043 N; 0362351 E.

A-0 to 8 inches; light reddish brown (5YR 6/4) silty clay loam, reddish brown (5YR $5 / 4$ ) moist; weak medium platy and moderate coarse granular structure; slightly hard, friable, moderately sticky and moderately plastic; common very fine, fine and few medium roots; few very fine and fine tubular pores; strongly effervescent; moderately alkaline; abrupt wavy boundary.
C1-8 to 16 inches; yellowish red (5YR 5/6) clay, reddish brown (5YR 5/4) moist; massive; hard, firm, very sticky and very plastic; common very fine, fine and medium roots; common very fine tubular pores; strongly effervescent; moderately alkaline; abrupt smooth boundary.
C2-16 to 24 inches; yellowish red (5YR 5/6) clay, yellowish red (5YR 4/6) moist; moderate medium platy structure; hard, firm, very sticky and very plastic; common very fine and fine roots; few very fine tubular pores; few thin strata of sands; strongly effervescent; moderately alkaline; abrupt smooth boundary.
Ck—24 to 60 inches; yellowish red (5YR 5/6) clay, reddish brown (5YR 4/4) moist; massive; very hard, very firm, very sticky and very plastic; few very fine and fine roots; few very fine tubular pores; strongly effervescent, very few very fine irregular calcium carbonate masses; moderately alkaline.

## Range in Characteristics

A horizon:
Hue:7.5YR or 5YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 4 to 6
Chorizon:
Hue:7.5YR or 5YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 4 to 6
Note: Strata of fine sands are common in the C horizon.

## Werlog Series

## Map unit: 21

Depth class: very deep
Drainage class: somewhat poorly drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: flood plains
Parent material: stream alluvium derived from sandstone and shale
Elevation: 5,500 to 6,000 feet ( 1,676 to 1,829 meters)
Slope: 0 to 1 percent
Climatic data:
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 50 to 52 degrees F. ( 10.0 to 11.1 degrees C.)
Frost-free period: 140 to 160 days
Taxonomic class: Fine-loamy, mixed, calcareous, mesic Aquic Ustifluvents

## Typical Pedon

Werlog clay loam, in an area of map unit 21, Werlog clay loam, 0 to 1 percent slopes; about 0.3 miles east and 0.3 miles north of Bode Store, New Mexico; New Mexico state plane coordinates 1,896,577 and 481,280 feet East. NAD 83, UTM 13 $-4008323 \mathrm{~N} ; 0381883 \mathrm{E}$.

A-0 to 6 inches; brown (10YR 4/3) clay loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; hard, friable, slightly sticky and moderately plastic; many fine and medium roots; common fine and few very fine vesicular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
C1-6 to 30 inches; brown (10YR 5/3) loam, brown (10YR 4/3) moist; few fine faint grayish brown ( $2.5 \mathrm{Y} 4 / 2$ ) mottles; massive; hard, friable, slightly sticky and slightly plastic; common medium, fine and few very fine roots; few fine and common very fine tubular pores; slightly effervescent; moderately alkaline; gradual smooth boundary.
C2-30 to 40 inches; pale brown (10YR 6/3) clay loam, dark brown (10YR 3/3) moist; few fine faint grayish brown ( $2.5 \mathrm{Y} 4 / 2$ ) mottles; massive; hard, friable, slightly sticky and moderately plastic; few medium, fine and very fine roots; few fine and very fine tubular pores; slightly effervescent; moderately alkaline; clear wavy boundary.
C3-40 to 43 inches; brown (10YR 5/3) fine sandy loam, dark grayish brown (10YR 4/2) moist; few medium faint olive brown (2.5YR 4/4) mottles; massive; hard, friable, nonsticky and nonplastic; few medium and fine roots; few fine tubular pores; slightly effervescent; moderately alkaline; clear wavy boundary.

C4-43 to 55 inches; brown (10YR 5/3) loam, dark grayish brown (10YR 4/2) moist; few medium faint olive brown (2.5Y 4/4) mottles; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine and very fine roots; few fine tubular pores; slightly effervescent; moderately alkaline clear wavy boundary.
C5—55 to 60 inches; pale brown (10YR 6/3) sand, brown (10YR 4/3) moist; few medium faint reddish brown (5YR 5/4) mottles; soft, loose, nonsticky and nonplastic; few very fine roots; few fine pores; slightly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Chroma: 2 or 3
C horizon:
Value: 5 or 6 dry, 3 or 4 moist
Chroma: 1 or 3
Texture, fine earth fraction: stratified loam, clay loam, and fine sandy loam. Strata of sand, sandy loam, or loam occur below a depth of 40 inches.

Note: A high water table may occur at 25 to 40 inches from March through November.

## Wiggler Series

Map unit: 127
Depth class: shallow
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Landform: sideslopes and summits of hills
Parent material: slope alluvium and colluvium derived from shale
Elevation: 7,400 to 8,100 feet (2,256 to 2,469 meters)
Slope: 5 to 25 percent
Climatic data:
Mean annual precipitation: 16 to 18 inches ( 406 to 457 millimeters)
Mean annual air temperature: 40 to 45 degrees F. (4.4 to 7.2 degrees C.)
Frost-free period: 80 to 100 days
Taxonomic class: Loamy, mixed, calcareous, frigid, shallow Typic Ustorthents

## Typical Pedon

Wiggler channery clay loam in an area of map unit 127, Rombo-Wiggler complex, 5 to 25 percent slopes; about 5 miles west and 4 miles south of Chama on the Lee Wood Ranch, New Mexico; New Mexico state plane coordinates 2,118,230 feet north and 376,670 feet east. NAD 83, UTM 13 - 4076287 N; 0350881 E.

A-0 to 3 inches; light gray ( $2.5 \mathrm{Y} 7 / 2$ ) channery clay loam, olive brown (2.5Y 4/4) moist; weak fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; common fine and medium roots; many fine interstitial pores; 25 percent channers; violently effervescent; moderately alkaline; clear smooth boundary.
C-3 to 10 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, firm, moderately sticky and moderately plastic; common fine and medium roots; many fine and very fine tubular pores; violently effervescent; moderately alkaline; clear smooth boundary.
Cr -10 inches; soft and fractured shale.

## Range in Characteristics

A horizon:
Value: 6 or 7 dry, 3 to 5 moist
Chroma: 2 to 4
Rock fragments: 15 to 30 percent channers and 0 to 5 percent flagstones
C horizon:
Value: 5 to 7 dry, 3 to 5 moist
Chroma: 2 to 4
Depth to a paralithic contact: 10 to 20 inches

## Yarts Series

Map unit: 149
Depth class: very deep
Drainage class: well drained
Slowest permeability: 2.0 to $6.0 \mathrm{in} . / \mathrm{hr}$. (moderately rapid)
Landform: stream terraces
Parent material: stream alluvium derived from sandstone and shale
Elevation: 5,800 to 6,500 feet ( 1,768 to 1,981 meters)
Slope: 1 to 4 percent
Climatic data:
Mean annual precipitation: 10 to 13 inches ( 254 to 330 millimeters)
Mean annual air temperature: 48 to 52 degrees F. (8.9 to 11.1 degrees C.)
Frost-free period: 120 to 140 days
Taxonomic class: Coarse-loamy, mixed, calcareous, mesic Ustic Torriorthents

## Typical Pedon

Yarts sandy loam, in an area of map unit 149, Yarts sandy loam, 1 to 4 percent slopes; 0.3 mile south and 0.3 mile east of Velarde, New Mexico; New Mexico state plane coordinates 1,870,500 feet south and 581,500 feet east. NAD 83, UTM 13 3999984 N; 0412320 E.

A-0 to 3 inches; light brown (7.5YR 6/4) sandy loam, brown (7.5YR 5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine interstitial pores; strongly effervescent; moderately alkaline; clear smooth boundary.
C-3 to 60 inches; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few very fine tubular pores; strongly effervescent; moderately alkaline.

## Range in Characteristics

A horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
C horizon:
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 or 4
Note: Rock fragments in the profile range from 0 to 10 percent gravel.

## Yata Series

Map unit: 137
Depth class: very deep
Drainage class: well drained
Slowest permeability: . 06 to 0.2 in./hr. (slow)
Landform: escarpments, mountain slopes
Parent material: slope alluvium and colluvium derived from mixed sources
Elevation: 8,100 to 9,700 feet (2,469 to 2,957 meters)
Slope: 50 to 80 percent
Climatic data:
Mean annual precipitation: 25 to 28 inches ( 635 to 711 millimeters)
Mean annual air temperature: 35 to 40 degrees F. (1.7 to 4.4 degrees C.)
Frost-free period: 50 to 70 days
Taxonomic class: Clayey-skeletal, mixed Argic Pachic Cryoborolls

## Typical Pedon

Yata loam, in an area of map unit 137, Yata-Eody loams, 50 to 80 percent slopes; about 5.1 miles east and 2.2 miles south of Monero, New Mexico; New Mexico state plan coordinates 2,123,478 feet north and 348,850 feet east. NAD 83, UTM $13-40$ 77998 N; 0342424 E.

A1-0 to 3 inches; very dark grayish brown (10YR $3 / 2$ ) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable; slightly sticky and slightly plastic; common fine and very fine roots; few very fine vesicular pores; neutral; clear smooth boundary.
A2-3 to 10 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; common very fine vesicular pores; neutral; gradual smooth boundary.
Bt1-10 to 21 inches; grayish brown (10YR 5/2) cobbly silty clay loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, firm, moderately sticky and moderately plastic; common fine, medium and few large roots; few very fine tubular pores; few thin clay films on faces of peds; 10 percent gravel and 20 percent cobbles; neutral; clear smooth boundary.
Bt2-21 to 31 inches; grayish brown (10YR 5/2) very cobbly silty clay, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; very hard, firm, moderately sticky and very plastic; few fine and medium roots; few very fine continuous tubular pores; common stress cutans, few moderately thick clay films in pores, many thick clay films coating rock fragments; 20 percent gravel and 30 percent cobbles; neutral; clear smooth boundary.
Bt3-31 to 60 inches; grayish brown ( $2.5 \mathrm{Y} 5 / 2$ ) very cobbly silty clay, dark grayish brown (2.5Y 4/2) moist; moderate medium subangular blocky structure; very hard, firm, moderately sticky and very plastic; few fine and medium roots; few very fine vesicular pores; few moderately thick clay films in pores and many thick clay films on rock fragments; 30 percent gravel and 25 percent cobbles; slightly alkaline.

## Range in Characteristics

A horizon:
Value: 2 to 4 dry and 2 or 3 moist
Bt horizon:
Hue: 10YR or 2.5 Y
Value: 4 or 5 dry and 3 or 4 moist
Rock fragments: 10 to 35 percent gravel and 20 to 30 percent cobbles

## Formation of the Soils

Soil is a collection of natural bodies occurring on the earth's surface and is capable of supporting plants. Its properties result from the extent to which physical, chemical and biological processes have affected the material, from which soil is derived, the parent material. The main processes active in the soils of the Rio Arriba Area are weathering of soil particles and rock material through dissolution and disintegration; accumulation and oxidation of organic matter in surface layers; formation of soil structure and surface crusting; movement of dissolved soil constituents with soil water, and precipitation of soil constituents from soil water; and movement of clay particles with soil water downward through the soil.

Most of these soil processes enhance plant growth, and some bring about hindrances to plant growth. Some soil processes are dependent upon other processes having reached a certain stage. Soil processes, or their lack, give the present soil its characteristics and are governed by five soil-forming factors: time, parent material, climate, relief and living organisms. Understanding and recognizing the extent to which soil processes have occurred affords the soil user the ability to predict the capability of soils for many uses.

## Time

The formation of parent material (the unconsolidated mineral and organic material which when exposed at the earth's surface give rise to soil) by the weathering of geologic deposits requires great amount of time. In addition, soil processes require a period of time before bringing about soil properties significantly different from properties inherited from the parent material. Many soil processes are dependent on the previous operation of other, different soil processes.

Therefore, the amount of time that a soil has been in place is very important to its present character. In the Rio Arriba Area, soils in the Rio Grande and Chama River valleys have been there a short time, resulting in soils like Gilco, Jocity, Abiquiu, and Peralta, which have little evidence of soil processes operating except for the accumulation of a small amount of organic matter in the surface layer. These and other young soils resemble very closely the original parent material form which they were derived.

Older soils have developed features, such as argillic, calcic, or cambic horizons, which indicate the relative length of time a soil has been in place, and which processes have been operational in the soil. The older a soil becomes, the less it resembles the parent material from which it was derived.

Recognition of horizons and features, with knowledge of how their accompanying processes affect soil fertility, soil bulk density, and other properties give great insight into the value of soil for specific uses.

## Parent Material

A complex geologic history, ranging from formation of sedimentary rocks while great seas covered the earth, to volcanism and mountain-forming processes provided a great many rock formations in the Rio Arriba Area, the constituents of which to a
great extent, determined the chemical, mineralogical, and textural attributes of the soils. Unless already unconsolidated, it is the decomposition and disintegration of these rocks which give rise to the parent material of soil.

Parent materials in the Rio Arriba Area fall into two broad categories. The first is material which, after weathering from rock, is not moved, but remains in place and is subject to soil-forming processes. The second category is unconsolidated rockderived material that has been transported by water, wind, or by force of gravity.

Soils formed in non-transported materials have mineralogical, chemical and textural traits, which are directly related to the rock from which the material is derived. There are many examples of such soils in the Rio Arriba Area. The Hagerman, Fruitland, Pinavetes, Vessilla, and Parida soils all contain high amounts of sand-sized quartz, inherited from their weathered sandstone parent material. Soils developed from weathered shale, such as Menefee, Teromote, Tottles, and Roques, contain a great deal of silt- and clay-sized particles of various clay minerals, feldspars, and some quartz. Other soils formed in untransported weathered rock material are the Peney and Ransect soils, from weathered limestone, and the Redondo soil from weathered tuff.

Soils formed in transported materials can have particles weathered from one rock type, a few or many types, depending on the method and distance of transport. Colluvial soils are formed in material moved by the force of gravity, which is transported a relatively short distance downslope. The Wauquie soil formed in material moved down slopes after weathering from granite and shale. Alanos soils formed in transported weathered tuff, and Palon soils are formed in weathered rhyolite that has moved down slopes.

The second type of transported soil parent material is eolian, or wind brown sediments. These are materials that begin as particles on the surface of other soils, end up comprising the entire depth of a new soil. The Pinavetes, Razito, and Royosa soils, when found in upland areas, are derived from eolian sand.

Alluvium is the third type of transported soil parent material found in the Rio Arriba Area. It is material that has been moved and deposited by streams and rivers. Alluvium is rarely derived from one rock type, and its sediments generally are mineralogically diversified. Often alluvial sediments are sorted according to texture. It is deposited in layers, which are often well-defined and contrasting in texture, color, and organic matter content. Alluvium is found throughout the Rio Arriba Area and varies greatly in age. Recent deposits of alluvium are found along the Rio Grande, Chama River and their tributaries. Soils such as the Gilco, Peralta, Abiquiu, Dula, Sparank, Jocity, and Sparham are formed in recent alluvium and display well defined layering. Older alluvium, much of which was deposited by the ancestral Rio Grande and its tributaries, is locally extensive in the survey area. Soil development processes have obliterated most evidence of layering in these soils. Some soils formed in old alluvium are Orlie, Dermala, Capillo, Elpedro, and Manzano.

Many soils in the Rio Arriba Area are formed in more than one kind of parent material. Mountain soils are often formed in a mantle of colluvium overlying untransported material weathered from bedrock. Soils atop basalt mesas, like Chita soils, formed in untransported weathered basalt material mixed with eolian silt. Royosa soils formed in eolian sands mixed with weathered sandstone, and sometimes have a cap of colluvial basalt particles. All soils in the area receive eolian deposits, in varying amounts and often so little that it is not recognizable. Often this is in minor yearly contributions of calcareous dust, which over many years can bring about a highly calcareous soil.

In addition to being the initial material on which soil processes act, the parent material affects in part, which and how fast soil-transforming processes occur, mainly by the rate that the parent material weathers and how fast it is transported.

## Climate

The climate of an area is greatly responsible for the types of soil processes and for the rate at which these processes occur. The main features of climate affecting soil processes are precipitation and temperature.

The climate of the Rio Arriba Area at present is semi-arid continental. The lowest areas have annual precipitation of about eight inches and mean annual air temperature of about 52 degrees F . These are the driest areas and areas of least vegetation. The small amount of organic matter produced by the vegetation is rapidly oxidized, resulting in soils with light colored surface horizons as in Razito and Fruitland soils.

With increased temperature, chemical and biochemical reactions are hastened. In addition, freeze-thaw cycles speed the weathering of soil and rock particles. The temperature also greatly affects evaporation of water from the soil and transpiration of water from plants.

As the amount of precipitation increases, the potential amount of vegetation on a soil increases. The number of days per year that the soil is moist during the frost-free period determines how much vegetation can be supported and the time during which soil processes occur. The depth to which water penetrates the soil is also very important as it determines the maximum depth of root penetration and the depth beyond which soil transforming processes are greatly slowed. If there is not enough precipitation for water to move through the entire soil and enter the ground water system, calcium carbonate deposits are precipitated at the depth of maximum water penetration.

In the cold, wet mountainous areas of the Rio Arriba Area, soils such as Gromes and Angostura support stands of large trees. These areas receive 30 or more inches of precipitation per year and the average annual air temperature is about 40 degrees F. The soils in these areas are moist more days per year than most others in the Rio Arriba Area. The cooler temperatures allow for a buildup of organic matter in the surface layers of these soils.

Older soils in the area have been influenced by past climates, which were similar to the present one, but slightly more moist and cooler. Similar soil processes took place, at an accelerated rate when compared to present conditions. For this reason some soils in the driest part of the Rio Arriba Area have strongly developed features such as the calcic horizon of the Pena soil, and argillic horizons of the Penistaja soil.

## Relief

Soil relief has a profound influence on the development of soil features. The many facets of relief, including degree, direction, shape, and roughness of the slope, influence the climate of a soil and the extent of erosive forces affecting a soil.

On steep soils, the potential for erosion is greatest and soil features develop slowly. As organic matter accumulations and weathered soil material washes away, new soil parent material or bedrock nears the surface. If the erosion is moderate or severe, it is accompanied by a decrease in vegetation and an increase in runoff water, which in turn enhances the erosion.

Soils on very slight or level slopes often receive depositions of soil material. This process also slows the development of soil features, since soil material is buried too deeply before soil-transforming processes are able to cause features to develop. This process is accompanied by an increase in amount of vegetation since along with new material, the soil receives run-on water.

The climate of a soil is affected greatly by the runoff or run-on water it sheds or receives.

Soils with a concave slope, such as the San Mateo soil, receive a great amount of their moisture from adjacent, steeper slopes. Soils with steeper slopes shed various amounts of water depending on their steepness, amount of vegetation, and surface roughness. Soils with a very gravelly surface composed of angular pebbles protruding from the surface can retain precipitation, even with a steep slope. A very gravelly surface of rounded, imbedded pebbles, however, will shed water rapidly and deprive the soil of moisture.

On steep slopes there is a wide difference in climate between adjacent northfacing and south-facing slopes. Less direct sunlight and less wind on north-facing slopes results in an evapotranspiration rate lower than that on south-facing slopes. This accounts for more days during which the soil is moist and more abundant vegetation on north-facing slopes.

The interaction of all the facets of soil relief can account for wide soil variations over short distances.

## Living Organisms

The life associated with a soil influences the processes within, as well as the features and the characteristics of a soil.

The vegetation supported by a soil is part of this life. Plant roots provide channels for water flow into depths of soils which otherwise might receive little water. Plant material provides the bulk of the organic portion of soil, which is important to fertility. Plant life is very important in retaining soils in place, protecting them from erosion. A good plant cover will reduce evaporation of water from the soil surface and reduce runoff, providing a soil with more moist days each year.

Insects, worms, and rodents affect aeration and intake rate by mixing and burrowing. Some animals affect the vegetation on the soil by their eating habits. Large animals, especially in dry areas where soil crusts form, enhance seed germination by walking across the soil surface, providing a favorable seedbed in their hoofprints.

Microscopic organisms function importantly in nutrient cycling. Fungi, bacteria, nematodes, and others process organic material and release nutrients for further plant growth. They also add acids, gases, and other chemical compounds that affect soil processes.

Many soils have been changed as a result of human intervention. People change vegetation on soils, animal and microbial life of soils, soil climate, and relief, through urban development, farming, ranching, logging, and sundry enterprises.

Considering the five soil-forming factors, all of them occur in wide variation throughout the Rio Arriba Area, resulting in a great variety of soils. These soils represent a great natural resource and provide for a variety of land uses. Knowledge of this body of soils and how they were derived can help one to guard and use the resources wisely.

## Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 1998) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units have major components that meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1998).

64 Dula loam, 0 to 2 percent slopes
117 Chamita loam, 0 to 2 percent slopes
118 Hesperus-Pastorius-Chamita complex, 0 to 5 percent slopes
129 Nusmag-Tottles clay loams, 0 to 3 percent slopes
209 Crubas-Bywell-Croftshaw complex, 0 to 15 percent slopes
240 Riverwash

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not have major components that meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include minor components that are hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

21 Werlog clay loam, 0 to 1 percent slopes
42 Walrees-Abiquiu complex, 0 to 2 percent slopes
54 Capillo silt loam, 0 to 8 percent slopes
61 Colomex gravelly silt loam, 0 to 3 percent slopes
66 Encicado silty clay loam, 0 to 3 percent slopes
107 Berryman-Ruson association, 1 to 8 percent slopes
119 Roques-Nusmag clay loams, 1 to 8 percent slopes
149 Yarts sandy loam, 1 to 4 percent slopes
151 Razito-Fruitland complex, 1 to 5 percent slopes
203 Nabor-Elbuck complex, 5 to 35 percent slopes
206 Angostura-Gromes complex, 15 to 35 percent slopes
207 Gromes-Rock outcrop complex, 15 to 40 percent slopes
208 Ess-Croftshaw complex, 3 to 20 percent slopes
215 Saragote-Ess complex, 2 to 8 percent slopes

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## Glossary

ABC soil. A soil having an A, a B, and a C horizon.
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 cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.
Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.
Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.
Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.
Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.
Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.
Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.
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:


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.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.
Bajada. A broad alluvial slope extending from the base of a mountain range out into a basin and formed by coalescence of separate alluvial fans.
Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of $\mathrm{Ca}, \mathrm{Mg}, \mathrm{Na}$, 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 slopewash sediments (for example, slope alluvium).
Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.
Bottom land. The normal flood plain of a stream, subject to flooding.
Boulders. Rock fragments larger than 2 feet ( 60 centimeters) in diameter.
Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.
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.
Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.
Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
Caliche. A more or less cemented deposit of calcium carbonate in soils of warmtemperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.
California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.
Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality ( pH 7.0 ) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.
Cement rock. Shaly limestone used in the manufacture of cement.
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 shatter or loosen hard, compacted layers to a depth below normal plow depth.
Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.
Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.
Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
Coarse textured soil. Sand or loamy sand.
Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches ( 7.6 to 25 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.
Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.
Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.
Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.
Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."
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.
Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.
Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.
Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
Cropping system. Growing crops according to a planned system of rotation and management practices.
Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.
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.
Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.
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.
Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.
Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."
Drainage, surface. Runoff, or surface flow of water, from an area.
Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.
Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/ or proportion of species or in total production.
Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.
Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.
Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.
Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.
Fan remnant. 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.

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.
Fine textured soil. Sandy clay, silty clay, or clay.
Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.
Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches ( 15 to 38 centimeters) long.
Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.
Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.
Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.
Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).
Forb. Any herbaceous plant not a grass or a sedge.
Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.
Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.
Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.
Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.
Ground water. Water filling all the unblocked pores of the material below the water table.
Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.
Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to 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.
High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.
Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.
Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.-An organic layer of fresh and decaying plant residue.
A horizon.-The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

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

C horizon.-The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C .

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

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

Hydrologic soil groups. Refers to soils grouped according to their runoff potential.
The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.
Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.
Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.
Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.
Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.
Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.
Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.
Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

| Less than 0.2 ......................................... very low |  |
| :---: | :---: |
| 0.2 to 0.4 |  |
| 0.4 to 0.75 .................................. moderately low |  |
| 0.75 to 1.25 .......................................... moderate |  |
| 1.25 to 1.75 ................................. moderately high |  |
| 1.75 to 2.5 | . high |
| More than 2. | . very high |

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.
Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.
Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.
Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

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

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

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

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

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

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

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

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

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

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

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.
Knoll. A small, low, rounded hill rising above adjacent landforms.
$\mathbf{K}_{\text {sat }}$. 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.
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 10 kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.
Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.
Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.
Low-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.
Major Land Resource Area. A geographic area, usually several million acres in extent, that is characterized by a particular pattern of soils, climate, water resources, and land uses. It is a category in a USDA system of land classification that is applied to all land of the United States. Identification of these areas is important in statewide resource planning and has value in interstate, regional, and national planning.
Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.
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.
Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.
Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.
Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.
Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.
Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.
Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.
Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.
Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.
Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
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; sizefine, 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.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.
Munsell notation. A designation of color by degrees of three simple variables-hue, value, and chroma. For example, a notation of $10 \mathrm{YR} 6 / 4$ 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.
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

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, hardpan, fragipan, claypan, plowpan, and traffic pan.
Parent material. The unconsolidated organic and mineral material in which soil forms.
Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.
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 | . 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 |
| ery rapid | ore than 20 inches |

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.
Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
Plastic limit. The moisture content at which a soil changes from semisolid to plastic.
Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.
Plowpan. A compacted layer formed in the soil directly below the plowed layer.
Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.
Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
Potential native plant community. See Climax plant community.
Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.
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.
Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

| Ultra acid | less than 3.5 |
| :---: | :---: |
| Extremely acid | . 3.5 to 4.4 |
| Very strongly acid | 4.5 to 5.0 |
| Strongly acid | 5.1 to 5.5 |
| Moderately acid | 5.6 to 6.0 |
| Slightly acid | 6.1 to 6.5 |
| Neutral | 6.6 to 7.3 |
| Slightly alkaline | 7.4 to 7.8 |
| Moderately alkaline | . 7.9 to 8.4 |
| Strongly alkaline | . 8.5 to 9.0 |
| Very strongly alkalin | . 1 and higher |

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.
Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.
Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.
Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.
Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.
Relief. The elevations or inequalities of a land surface, considered collectively.
Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.
Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.
Root zone. The part of the soil that can be penetrated by plant roots.
Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.
Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.
Salinity (in map unit descriptions). The degree to which a soil is affected by soluble salts. Salinity is expressed as the electrical conductivity of the saturation
extract in millimhos per centimeter at 25 degrees $C$. The degrees of salinity and their respective conductivies in millimhos per centimeter are:
Nonsaline ........................................................ 0 to 2
Very slightly saline ............................................. 2 to 4
Slightly saline ...................................................... 4 to 8
Moderately saline ............................................. 8 to 16
Strongly saline ..................................... more than 16

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.
Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.
Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.
Shale. Sedimentary rock formed by the hardening of a clay deposit.
Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.
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.
Shrink-swell potential (in map unit descriptions). A measure of the potential expansion of a soil upon wetting, also termed "linear extensibility." It is the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is expressed as the volume change, as a percent of the whole soil, from the water content of a clod at $1 / 3$ - bar tension (33kPa) to oven dryness. As used in the map unit descriptions, classes of shrink swell potential are based on the thickest layer between a depth of 10 and 60 inches. The classes and their respective values of percent linear extensibility are:

| Low | 0 to 3 |
| :---: | :---: |
| Moderate | 3 to 6 |
| High | 6 to 9 |
| Very high | than 9 |

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.
Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay ( 0.002 millimeter) to the lower limit of very fine sand ( 0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.
Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 .
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.
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 $\mathrm{Na}^{+}$to $\mathrm{Ca}^{++}+\mathrm{Mg}^{++}$. The degrees of sodicity and their respective ratios are:

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Nonsodic ......................................................... 0
Slight ....................................................... O to 13:1
Moderate ............................................. 13 to 30:1
Strong ......................................... more than 30:1
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Sodium adsorption ratio (SAR). A measure of the amount of sodium ( Na ) relative to calcium (Ca) and magnesium $(\mathrm{Mg})$ 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 $\mathrm{Ca}+\mathrm{Mg}$ 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 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 .................................................. Iess than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the $A, E$, and $B$ horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.
Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.
Stones. Rock fragments 10 to 24 inches ( 25 to 60 centimeters) in diameter if rounded or 15 to 24 inches ( 38 to 60 centimeters) in length if flat.
Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.
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).
Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.
Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.
Substratum. The part of the soil below the solum.
Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.
Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.
Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches ( 10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."
Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.
Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.
Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.
Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."
Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.
Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
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.
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.
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.

## Tables

Table 1.--Temperature and precipitation
(Recorded in the period 1971-2000 at Alcalde, NM, \#0245)

| Month | Temperature |  |  |  |  |  | Precipitation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ \text { daily } \\ \text { maximum } \end{gathered}$ | $\begin{aligned} & \text { Average } \\ & \text { daily } \\ & \text { minimum } \end{aligned}$ | Average | 2 years in 10 will have-- |  | Average number of growing degree days* | Average | 2 years in 10 |  | Average number of days with 0.10 inch or more | Average snowfall |
|  |  |  |  | Maximum temperature higher than-- | Minimum temperature $\quad$ lower than-- |  |  | Less than-- | More than-- |  |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | Units | In. | In. | In. |  | In. |
| January- | 45.6 | 15.9 | 30.8 | 63 | -9 | 4 | 0.40 | 0.05 | 0.73 | 1 | 2.5 |
| February- | 52.4 | 21.3 | 36.8 | 69 | 3 | 33 | 0.38 | 0.03 | 0.71 | 1 | 2.6 |
| March--- | 60.0 | 26.8 | 43.4 | 77 | 11 | 139 | 0.58 | 0.12 | 0.99 | 2 | 1.8 |
| April---- | 67.7 | 32.7 | 50.2 | 83 | 17 | 305 | 0.66 | 0.07 | 1.09 | 1 | 0.2 |
| May----- | 76.9 | 40.5 | 58.7 | 91 | 26 | 569 | 0.84 | 0.00 | 1.41 | 2 | 0.1 |
| June---- | 86.7 | 48.7 | 67.7 | 98 | 36 | 815 | 0.84 | 0.19 | 1.27 | 2 | 0.0 |
| July---- | 89.3 | 55.0 | 72.2 | 99 | 44 | 981 | 1.36 | 0.49 | 2.23 | 4 | 0.0 |
| August--- | 86.8 | 53.8 | 70.3 | 97 | 41 | 915 | 1.80 | 0.93 | 2.67 | 4 | 0.0 |
| September | 80.6 | 45.1 | 62.9 | 92 | 29 | 678 | 1.25 | 0.40 | 2.09 | 2 | 0.0 |
| October-- | 70.8 | 33.3 | 52.1 | 86 | 17 | 375 | 1.04 | 0.16 | 1.79 | 2 | 0.3 |
| November- | 56.5 | 23.5 | 40.0 | 73 | 6 | 79 | 0.84 | 0.26 | 1.28 | 2 | 1.0 |
| December- | 46.4 | 16.5 | 31.4 | 62 | -1 | 6 | 0.37 | 0.00 | 0.62 | 1 | 1.2 |
| Yearly: |  |  |  |  |  |  |  |  |  |  |  |
| Average | 68.3 | 34.4 | 51.4 | --- | --- | --- | --- | --- | --- | --- | --- |
| Extreme | 102 | -34 | --- | 100 | -10 | --- | --- | --- | --- | -- | --- |
| Total-- | --- | --- | --- | --- | --- | 4900 | 10.35 | 6.92 | 12.49 | 24 | 9.7 |

Table 1.--Temperature and precipitation--Continued
(Recorded in the period 1971-2000 at Chama, NM, \#1664)

| Month | Temperature |  |  |  |  |  | Precipitation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Average } \\ & \text { daily } \\ & \text { maximum } \end{aligned}$ | Average daily minimum | Average | 2 years in 10 will have-- |  | Average number of growing degree days* | Average | 2 years in 10 will have-- |  | Average number of days with 0.10 inch or more | Average snowfall |
|  |  |  |  | Maximum temperature higher than-- | Minimum temperature lower than-- |  |  | Less than-- | More than-- |  |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | Units | In. | In. | In. |  | In. |
| January- | 37.1 | 4.8 | 20.9 | 53 | -21 | 0 | 1.98 | 0.65 | 3.24 | 4 | 26.1 |
| February- | 41.1 | 9.4 | 25.3 | 56 | -18 | 0 | 1.84 | 0.71 | 2.90 | 4 | 21.3 |
| March--- | 47.4 | 16.6 | 32.0 | 65 | -7 | 11 | 2.20 | 0.88 | 3.55 | 5 | 17.6 |
| April--- | 56.1 | 23.2 | 39.6 | 71 | 2 | 78 | 1.50 | 0.59 | 2.33 | 4 | 5.7 |
| May----- | 65.2 | 30.6 | 47.9 | 79 | 15 | 253 | 1.45 | 0.49 | 2.44 | 4 | 0.7 |
| June---- | 76.1 | 37.4 | 56.7 | 88 | 23 | 494 | 1.10 | 0.34 | 1.89 | 3 | 0.0 |
| July---- | 80.4 | 44.3 | 62.3 | 90 | 32 | 685 | 2.14 | 1.05 | 3.15 | 6 | 0.0 |
| August--- | 77.7 | 44.3 | 61.0 | 88 | 33 | 646 | 2.88 | 2.04 | 3.72 | 7 | 0.0 |
| September | 71.5 | 36.9 | 54.2 | 84 | 20 | 427 | 2.10 | 1.12 | 2.93 | 5 | 0.0 |
| October-- | 61.1 | 26.6 | 43.9 | 76 | 6 | 161 | 2.12 | 0.63 | 3.54 | 4 | 3.9 |
| November- | 46.3 | 15.7 | 31.0 | 65 | -9 | 12 | 1.98 | 0.93 | 3.02 | 4 | 13.3 |
| December- | 38.5 | 7.7 | 23.1 | 55 | -18 | 0 | 1.64 | 0.51 | 2.74 | 4 | 18.5 |
| Yearly: |  |  |  |  |  |  |  |  |  |  |  |
| Average | 58.2 | 24.8 | 41.5 | --- | --- | --- | --- | --- | --- | --- | --- |
| Extreme | 92 | -30 | --- | 91 | -25 | --- | --- | --- | --- | --- | --- |
| Total-- | --- | --- | --- | --- | --- | 2767 | 22.94 | 18.74 | 26.97 | 54 | 107.1 |

Table 1.--Temperature and precipitation--Continued
(Recorded in the period 1971-2000 at Dulce, NM, \#2608)

| Month | Temperature |  |  |  |  |  | Precipitation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average daily maximum | $\begin{gathered} \text { Average } \\ \text { daily } \\ \text { minimum } \end{gathered}$ | Average | 2 years in10 will have- |  | Average number of growing degree days* | Average | $\begin{aligned} & 2 \text { years in } 10 \\ & \text { will have-- } \end{aligned}$ |  | Average number of days with 0.10 inch or more | Average snowfall |
|  |  |  |  | $\begin{aligned} & \text { Maximum } \\ & \text { temperature } \\ & \text { higher } \end{aligned}$ than-- | $\qquad$ |  |  | $\begin{gathered} \text { Less } \\ \text { than-- } \end{gathered}$ | More than-- |  |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | Units | In. | In. | In. |  | In. |
| January- | 41.0 | 6.9 | 23.9 | 58 | -22 | 0 | 1.40 | 0.50 | 2.28 | 3 | 15.2 |
| February- | 45.9 | 13.1 | 29.5 | 62 | -13 | 3 | 1.22 | 0.41 | 2.04 | 3 | 11.6 |
| March--- | 53.2 | 20.5 | 36.9 | 70 | 0 | 33 | 1.63 | 0.64 | 2.58 | 4 | 7.4 |
| April--- | 62.0 | 25.1 | 43.5 | 77 | 9 | 142 | 1.09 | 0.46 | 1.63 | 3 | 2.3 |
| May---- | 70.6 | 31.7 | 51.2 | 84 | 17 | 352 | 1.42 | 0.32 | 2.59 | 3 | 0.0 |
| June---- | 80.9 | 38.0 | 59.5 | 92 | 25 | 584 | 0.75 | 0.15 | 1.30 | 2 | 0.0 |
| July---- | 85.0 | 46.3 | 65.6 | 95 | 32 | 787 | 1.74 | 0.60 | 2.88 | 4 | 0.0 |
| August-- | 82.6 | 47.0 | 64.8 | 93 | 34 | 764 | 2.51 | 1.27 | 3.76 | 6 | 0.0 |
| September | 76.2 | 38.2 | 57.2 | 88 | 21 | 515 | 1.68 | 0.72 | 2.61 | 4 | 0.0 |
| October-- | 65.8 | 27.4 | 46.6 | 81 | 11 | 222 | 1.72 | 0.42 | 2.96 | 4 | 1.0 |
| November- | 51.0 | 17.8 | 34.4 | 69 | -6 | 23 | 1.45 | 0.53 | 2.40 | 4 | 6.1 |
| December- | 42.4 | 9.2 | 25.8 | 59 | -17 | 0 | 1.16 | 0.38 | 1.90 | 3 | 12.2 |
| Yearly: |  |  |  |  |  |  |  |  |  |  |  |
| Average | 63.1 | 26.7 | 44.9 | --- | --- | --- | --- | --- | --- | --- | --- |
| Extreme | 97 | -38 | --- | 95 | -25 | --- | --- | --- | --- | --- | --- |
| Total-- | --- | --- | --- | --- | --- | 3425 | 17.78 | 14.77 | 20.63 | 43 | 55.8 |

Table 1.--Temperature and precipitation--Continued
(Recorded in the period 1971-2000 at lindrith 2 SE, NM, \#4960)

| Month | Temperature |  |  |  |  |  | Precipitation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ \text { daily } \\ \text { maximum } \end{gathered}$ | Average daily minimum | Average | 2 years in 10 will have-- |  | Average number of growing degree days* | Average | $\begin{aligned} & 2 \text { years in } 10 \\ & \text { will have-- } \end{aligned}$ |  | Average number of days with 0.10 inch or more | Average snowfall |
|  |  |  |  | Maximum temperature higher than-- | Minimum temperature lower than-- |  |  | Less than-- | More than-- |  |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | Units | In. | In. | In. |  | In. |
| January- | 40.3 | 10.8 | 25.5 | 58 | -16 | 1 | 1.05 | 0.37 | 1.68 | 3 | 16.1 |
| February - | 44.7 | 15.1 | 29.9 | 61 | -15 | 4 | 0.81 | 0.36 | 1.17 | 3 | 11.7 |
| March-- | 52.4 | 22.2 | 37.3 | 69 | -1 | 47 | 1.35 | 0.42 | 2.33 | 4 | 9.8 |
| April--- | 61.1 | 27.4 | 44.2 | 77 | 9 | 167 | 0.79 | 0.14 | 1.38 | 2 | 4.0 |
| May---- | 70.2 | 35.8 | 53.0 | 84 | 18 | 402 | 0.92 | 0.16 | 1.73 | 3 | 0.3 |
| June---- | 81.7 | 45.1 | 63.4 | 94 | 27 | 694 | 0.86 | 0.16 | 1.47 | 2 | 0.0 |
| July--- | 85.1 | 50.7 | 67.9 | 96 | 38 | 830 | 1.89 | 0.91 | 2.70 | 5 | 0.0 |
| August-- | 82.2 | 50.0 | 66.1 | 93 | 39 | 802 | 2.24 | 1.29 | 3.07 | 6 | 0.0 |
| September | 75.8 | 42.3 | 59.0 | 89 | 25 | 564 | 1.26 | 0.44 | 2.15 | 3 | 0.0 |
| October-- | 64.8 | 31.2 | 48.0 | 80 | 11 | 265 | 1.13 | 0.30 | 1.72 | 3 | 2.5 |
| November- | 49.8 | 20.2 | 35.0 | 69 | -3 | 32 | 1.12 | 0.45 | 1.76 | 3 | 7.1 |
| December- | 42.1 | 13.2 | 27.7 | 60 | -11 | 1 | 0.85 | 0.19 | 1.40 | 2 | 10.3 |
| Yearly: |  |  |  |  |  |  |  |  |  |  |  |
| Average | 62.5 | 30.3 | 46.4 | --- | --- | --- | --- | --- | --- | --- | --- |
| Extreme | 100 | -25 | --- | 96 | -19 | --- | --- | --- | --- | --- | --- |
| Total-- | --- | --- | --- | --- | --- | 3810 | 14.28 | 10.05 | 16.62 | 39 | 62.0 |

Table 1.--Temperature and precipitation--Continued
(Recorded in the period 1971-2000 at Tierra Amarilla 4 N, NM, \#8845)

| Month | Temperature |  |  |  |  |  | Precipitation |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ \text { daily } \\ \text { maximum } \end{gathered}$ | Average daily minimum | Average | 2 years in10 will have-- |  | Average number of growing degree days* | Average | $\begin{aligned} & 2 \text { years in } 10 \\ & \text { will have-- } \end{aligned}$ |  | Average number of days with 0.10 inch or more | Average snowfall |
|  |  |  |  | Maximum temperature higher higher | $\qquad$ |  |  | $\begin{aligned} & \text { Less } \\ & \text { than-- } \end{aligned}$ | More than-- |  |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | Units | In. | In. | In. |  | In. |
| January----- | 38.6 | 4.0 | 21.3 | 55 | -25 | 0 | 1.18 | 0.39 | 1.88 | 3 | 12.9 |
| February---- | 43.2 | 9.6 | 26.4 | 58 | -18 | 1 | 1.04 | 0.28 | 1.73 | 3 | 11.7 |
| March------ | 50.3 | 18.0 | 34.2 | 68 | -3 | 18 | 1.35 | 0.47 | 2.23 | 4 | 10.8 |
| April------ | 58.3 | 24.0 | 41.1 | 74 | 5 | 96 | 1.06 | 0.35 | 1.67 | 3 | 4.5 |
| May-------- | 67.7 | 31.2 | 49.4 | 81 | 17 | 292 | 1.27 | 0.41 | 2.07 | 3 | 0.3 |
| June------- | 77.9 | 37.6 | 57.7 | 90 | 25 | 526 | 0.76 | 0.28 | 1.24 | 2 | 0.0 |
| July------- | 82.0 | 45.2 | 63.6 | 92 | 33 | 722 | 1.89 | 0.91 | 2.86 | 5 | 0.0 |
| August----- | 79.8 | 45.1 | 62.4 | 89 | 34 | 678 | 2.54 | 1.60 | 3.45 | 7 | 0.0 |
| September--- | 73.4 | 36.8 | 55.1 | 86 | 21 | 450 | 1.77 | 0.84 | 2.66 | 4 | 0.0 |
| October----- | 63.1 | 27.0 | 45.1 | 79 | 10 | 178 | 1.44 | 0.50 | 2.30 | 3 | 2.0 |
| November---- | 48.2 | 16.2 | 32.2 | 68 | -8 | 13 | 1.27 | 0.47 | 2.06 | 3 | 10.1 |
| December---- | 39.8 | 7.1 | 23.4 | 57 | -17 | 0 | 0.89 | 0.24 | 1.46 | 2 | 11.4 |
| Yearly: |  |  |  |  |  |  |  |  |  |  |  |
| Average--- | 60.2 | 25.1 | 42.7 | - | --- | --- | - | --- | --- | --- | -- |
| Extreme--- | 95 | -39 | --- | 93 | -26 | - | - | --- | --- | -- | --- |
| Total---- | --- | --- | --- | - | --- | 2975 | 16.47 | 11.58 | 19.18 | 42 | 63.7 |

* 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 1971-2000 at Alcalde, NM, \#0245)

| Probability | Temperature |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 24 \circ_{F} \\ \text { or lower } \end{gathered}$ | $\begin{gathered} 280_{F} \\ \text { or lower } \end{gathered}$ | $\begin{gathered} 32^{\circ} \mathrm{F} \\ \text { or lower } \end{gathered}$ |  |
| Last freezing temperature in spring: |  |  |  |  |
| 1 year in 10 later than-- | April 26 | May 11 | May | 23 |
| 2 years in 10 later than-- | April 20 | May 5 | May | 18 |
| 5 years in 10 later than-- | April 9 | April 25 | May | 9 |
| First freezing temperature in fall: |  |  |  |  |
| $\begin{aligned} & 1 \mathrm{yr} \text {. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | October 8 | September 29 | September | 22 |
| $\begin{aligned} & 2 \text { yrs. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | October 13 | October 4 | September | 26 |
| 5 yrs. in 10 earlier than-- | October 25 | October 13 | October | 3 |

Table 2.--Freeze dates in spring and fall--Continued

| Probability | Temperature |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 24 \circ_{F} \\ \text { or lower } \end{gathered}$ | $\begin{gathered} 28 \circ_{F} \\ \text { or lower } \end{gathered}$ | $\begin{aligned} & 32 \circ_{F} \\ & \text { or lower } \end{aligned}$ |  |
| Last freezing temperature in spring: |  |  |  |  |
| 1 year in 10 <br> later than-- | June 10 | June 25 | July | 8 |
| 2 years in 10 later than-- | June 4 | June 20 | July | 3 |
| 5 years in 10 later than-- | May 23 | June 10 | June | 24 |
| First freezing temperature in fall: |  |  |  |  |
| $\begin{aligned} & 1 \text { yr. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | September 18 | September 10 | August |  |
| $\begin{aligned} & 2 \text { yrs. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | September 23 | September 14 | August |  |
| $\begin{aligned} & 5 \text { yrs. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | October 1 | September 22 | September |  |

Table 2.--Freeze dates in spring and fall--Continued (Recorded in the period 1971-2000 at Dulce, NM, \#2608)

| Probability | Temperature |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 24 \text { of } \\ & \text { or lower } \end{aligned}$ | $\begin{gathered} 28 \text { oF } \\ \text { or lower } \end{gathered}$ | $\begin{gathered} 32 \text { oF } \\ \text { or lower } \end{gathered}$ |  |
| Last freezing temperature in spring: |  |  |  |  |
| 1 year in 10 later than-- | June 6 | June 22 | July | 12 |
| 2 years in 10 later than-- | May 30 | June 16 | July | 6 |
| 5 years in 10 later than-- | May 18 | June 3 | June | 24 |
| First freezing temperature in fall: |  |  |  |  |
| $\begin{aligned} & 1 \mathrm{yr} \text {. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | September 18 | September 10 | August | 28 |
| $\begin{aligned} & 2 \text { yrs. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | September 23 | September 14 | September | 3 |
| $\begin{aligned} & 5 \text { yrs. in } 10 \\ & \text { earlier than-- } \end{aligned}$ | October 3 | September 22 | September |  |



Table 2.--Freeze dates in spring and fall--Continued


Table 3.--Growing season

| (Recorded for \#0245) <br> Probability | NM |  |  |
| :---: | :---: | :---: | :---: |
| Probability | Daily Minimum Temperature During growing season |  |  |
|  | Higher <br> than <br> $24{ }^{\circ} \mathrm{F}$ | $\begin{aligned} & \text { Higher } \\ & \text { than } \\ & 28 \circ_{F} \end{aligned}$ | Higher than $32{ }^{\circ} \mathrm{F}$ |
|  | Days | Days | Days |
| 9 years in 10 | 171 | 150 | 131 |
| 8 years in 10 | 181 | 157 | 137 |
| 5 years in 10 | 199 | 170 | 148 |
| 2 years in 10 | 217 | 183 | 160 |
| 1 year in 10 | 227 | 190 | 166 |
|  |  |  |  |

Table 3.--Growing season--Continued

| (Recorded for \#1664) | period | $-2000$ | ma, NM, |
| :---: | :---: | :---: | :---: |
| Probability | Daily Minimum Temperature During growing season |  |  |
|  | Higher <br> than <br> $24^{\circ} \mathrm{F}$ | Higher than $28^{\circ} \mathrm{F}$ | Higher than $32^{\circ} \mathrm{F}$ |
|  | Days | Days | Days |
| 9 years in 10 | 107 | 84 | 55 |
| 8 years in 10 | 115 | 91 | 63 |
| 5 years in 10 | 130 | 104 | 78 |
| 2 years in 10 | 146 | 116 | 94 |
| 1 year in 10 | 154 | 123 | 102 |

Table 3.--Growing season--Continued


Table 3.--Growing season--Continued
(Recorded for the period 1971-2000 at Lindrith 2 SE, NM, \#4960)

| Probability | Daily Minimum Temperature During growing season |  |  |
| :---: | :---: | :---: | :---: |
|  | Higher <br> than <br> $24{ }^{\circ} \mathrm{F}$ | Higher <br> than <br> $28{ }^{\circ} \mathrm{F}$ | Higher <br> than <br> $32{ }^{\circ} \mathrm{F}$ |
|  | Days | Days | Days |
| 9 years in 10 | 121 | 98 | 86 |
| 8 years in 10 | 134 | 109 | 96 |
| 5 years in 10 | 159 | 131 | 117 |
| 2 years in 10 | 184 | 152 | 137 |
| 1 year in 10 | 197 | 164 | 148 |

Table 3.--Growing season--Continued

| Probability | Daily Minimum Temperature During growing season |  |  |
| :---: | :---: | :---: | :---: |
|  | Higher than $24^{\circ} \mathrm{F}$ | Higher than $28^{\circ} \mathrm{F}$ | Higher than $32{ }^{\circ} \mathrm{F}$ |
|  | Days | Days | Days |
| 9 years in 10 | 116 | 89 | 57 |
| 8 years in 10 | 125 | 96 | 66 |
| 5 years in 10 | 142 | 110 | 84 |
| 2 years in 10 | 158 | 124 | 102 |
| 1 year in 10 | 167 | 131 | 112 |

Table 4.--Acreage and proportionate extent of the soils

| $\begin{gathered} \text { Map } \\ \text { symbol } \end{gathered}$ | Soil name | Rio Arriba County | Sandoval County | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Area | Extent |
|  |  | Acres | Acres | Acres | Pct. |
| 9 | Pinavetes-Florita complex, 2 to 10 percent slopes | 26,034 | --- | 26,034 | 1.6 |
| 10 | Sparank-San Mateo silt loams, saline, sodic, 0 to 3 percent slopes | 35,041 |  | 35,041 | 2.2 |
| 11 | Fruitland sandy loam, 0 to 3 percent slopes-- | 3,475 | --- | 3,475 | 0.2 |
| 12 | Pinavetes loamy sand, 0 to 3 percent slopes-- | 3,658 | --- | 3,658 | 0.2 |
| 18 | Abiquiu-Peralta complex, 0 to 3 percent slopes | 7,795 | --- | 7,795 | 0.5 |
| 20 | Menefee-Vessilla-Rock outcrop complex, 5 to 35 percent slopes- | 24,568 |  | 24,568 | 1.6 |
| 21 | Werlog clay loam, 0 to 1 percent slopes----- | 2,755 | --- | 2,755 | 0.2 |
| 22 | Jocity-Gilco complex, 1 to 3 percent slopes-- | 3,531 | --- | 3,531 | 0.2 |
| 23 | Gilco sandy clay loam, 0 to 3 percent slopes- | 1,502 | --- | 1,502 | * |
| 24 | Jocity sandy clay loam, 0 to 1 percent slopes | 898 | --- | 898 | * |
| 30 | San Mateo sandy loam, 0 to 3 percent slopes-- | 14,222 | --- | 14,222 | 0.9 |
| 31 | Gobernador-Orlie association, 0 to 8 percent slopes- | 16,444 |  | 16,444 | 1.0 |
| 34 | Alcalde clay, 0 to 3 percent slopes---------- | 894 | --- | 894 | * |
| 39 | Fruitland sandy loam, 3 to 5 percent slopes-- | 6,057 | --- | 6,057 | 0.4 |
| 40 | Pinitos-Menefee-Vessilla complex, 2 to 20 percent slopes | 48,287 | --- | 48,287 | 3.1 |
| 42 | Walrees-Abiquiu complex, 0 to 2 percent slopes | 5,744 | --- | 5,744 | 0.4 |
| 50 | Stout-Kunz sandy loams, 5 to 15 percent slopes | 5,113 | --- | 5,113 | 0.3 |
| 54 | Capillo silt loam, 0 to 8 percent slopes---- | 1,126 | --- | 1,126 | * |
| 60 | Sparham clay loam, 0 to 3 percent slopes---- | 817 | --- | 817 | * |
| 61 | Colomex gravelly silt loam, 0 to 3 percent slopes | 2,585 | --- | 2,585 | 0.2 |
| 64 | Dula loam, 0 to 2 percent slopes------------- | 4,622 | --- | 4,622 | 0.3 |
| 65 | Doslomas loam, 0 to 3 percent slopes-------- | 840 | --- | 840 | * |
| 66 | Encicado silty clay loam, 0 to 3 percent slopes- | 721 | -- | 721 | * |

Table 4.--Acreage and proportionate extent of the soils

| Mapsymbol symbol | Soil name | Rio Arriba County | Sandoval County | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Area | Extent |
|  |  | Acres | Acres | Acres | Pct. |
| 69 | Lindrith-Royosa complex, 2 to 7 percent slopes- | 8,524 | --- | 8,524 | 0.5 |
| 70 | Sparham clay loam, saline, sodic, 0 to 3 percent slopes | 21,340 | --- | 21,340 | 1.3 |
| 80 | Orlie-Nalivag loams, 2 to 8 percent slopes---\| | 23,496 | --- | 23,496 | 1.5 |
| 102 | Menefee-Nalivag complex, 8 to 25 percent slopes | 5,010 | --- | 5,010 | 0.3 |
| 103 | Orlie fine sandy loam, 1 to 8 percent slopes-\| | 98,044 | 819 | 98,863 | 6.3 |
| 106 | Amal silt loam, 2 to 8 percent slopes-------\| | 6,903 | --- | 6,903 | 0.4 |
| 107 | Berryman-Ruson association, 1 to 8 percent slopes- | 41,656 | --- | 41,656 | 2.6 |
| 108 | Peney-Ransect association, 1 to 20 percent slopes- | 10,441 | --- | 10,441 | 0.7 |
| 109 | Calendar gravelly loam, 5 to 35 percent slopes- | 16,409 | --- | 16,409 | 1.0 |
| 110 | Vessilla-Menefee-Orlie complex, 1 to 30 percent slopes | 168,998 | --- | 168,998 | 10.7 |
| 113 | Teromote-Ruson association, 1 to 8 percent slopes | 9,143 | --- | 9,143 | 0.6 |
| 115 | Menefee channery loam, 2 to 35 percent slopes\| | 15,116 | --- | 15,116 | 1.0 |
| 117 | Chamita loam, 0 to 2 percent slopes---------\| | 5,828 | --- | 5,828 | 0.4 |
| 118 | Hesperus-Pastorius-Chamita complex, 0 to 5 percent slopes | 11,433 | --- | 11,433 | 0.7 |
| 119 | Roques-Nusmag clay loams, 1 to 8 percent slopes | 22,755 | --- | 22,755 | 1.4 |
| 125 | Hogg-Mara loams, 2 to 12 percent slopes------\| | 23,907 | --- | 23,907 | 1.5 |
| 127 | Rombo-Wiggler complex, 5 to 25 percent slopes | 25,968 | --- | 25,968 | 1.6 |
| 129 | Nusmag-Tottles clay loams, 0 to 3 percent slopes- | 5,755 | --- | 5,755 | 0.4 |
| 130 | Topetaul-Hogg complex, 3 to 25 percent slopes\| | 7,626 | --- | 7,626 | 0.5 |
| 132 | Stout-Rock outcrop-Carjo complex, 5 to 20 percent slopes | 9,754 | --- | 9,754 | 0.6 |
| 133 | Carrick silt loam, 1 to 4 percent slopes----- | 6,610 | 81 | 6,691 | 0.4 |

Table 4.--Acreage and proportionate extent of the soils

| Map symbol | Soil name | Rio Arriba County | Sandoval County | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Area | Extent |
|  |  | Acres | Acres | Acres | Pct. |
| 136 | Elpedro silt loam, 1 to 5 percent slopes | 29,412 | --- | 29,412 | 1.9 |
| 137 | Yata-Eody loams, 50 to 80 percent slopes | 16,090 | --- | 16,090 | 1.0 |
| 140 | Espiritu-Wauquie association, 35 to 60 percent slopes | 19,023 | 703 | 19,726 | 1.2 |
| 141 | Capillo-Carjo-Vamer complex, 3 to 25 percent slopes- | 18,971 | --- | 18,971 | 1.2 |
| 142 | Pinavetes loamy sand, 3 to 12 percent slopes- | 22,723 | --- | 22,723 | 1.4 |
| 145 | Dermala-Rosced complex, 20 to 50 percent slopes | 19,133 | --- | 19,133 | 1.2 |
| 146 | Parida-Palacid very gravelly sandy loams, 10 to 40 percent slopes | 22,848 | --- | 22,848 | 1.4 |
| 147 | Dermala-Chimayo complex, 20 to 50 percent slopes- | 6,162 |  | 6,162 | 0.4 |
| 148 | Chita loam, 0 to 5 percent slopes------------ | 17,675 | --- | 17,675 | 1.1 |
| 149 | Yarts sandy loam, 1 to 4 percent slopes----- | 10,826 | --- | 10,826 | 0.7 |
| 151 | Razito-Fruitland complex, 1 to 5 percent slopes | 12,230 | --- | 12,230 | 0.8 |
| 170 | Sedillo cobbly loam, 0 to 5 percent slopes-- | 1,845 | --- | 1,845 | 0.1 |
| 173 | Oelop fine sandy loam, 1 to 5 percent slopes- | 5,710 | --- | 5,710 | 0.4 |
| 180 | Oelop loam, 0 to 5 percent slopes----------- | 2,279 | --- | 2,279 | 0.1 |
| 182 | Oelop sandy loam, 5 to 9 percent slopes------ | 1,090 | --- | 1,090 | * |
| 190 | Sedillo loam, 0 to 3 percent slopes---------- | 1,640 | --- | 1,640 | 0.1 |
| 200 | Katlon silt loam, 25 to 45 percent slopes--- | 1,958 | --- | 1,958 | 0.1 |
| 201 | Lobat-Abreu gravelly loams, 15 to 60 percent slopes- | 47,011 | --- | 47,011 | 3.0 |
| 203 | Nabor-Elbuck complex, 5 to 35 percent slopes- | 41,247 | --- | 41,247 | 2.6 |
| 206 | Angostura-Gromes complex, 15 to 35 percent slopes | 23,724 | --- | 23,724 | 1.5 |
| 207 | Gromes-Rock outcrop complex, 15 to 40 percent slopes- | 11,042 | --- | 11,042 | 0.7 |
| 208 | Ess-Croftshaw complex, 3 to 20 percent slopes | 16,136 | 340 | 16,476 | 1.0 |
| 209 | Crubas-Bywell-Croftshaw complex, 0 to 15 percent slopes | 11,871 | --- | 11,871 | 0.8 |

Table 4.--Acreage and proportionate extent of the soils

| $\begin{gathered} \text { Map } \\ \text { symbol } \end{gathered}$ | Soil name | Rio Arriba County | Sandoval County | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Area | Extent |
|  |  | Acres | Acres | Acres | Pct. |
| 210 | Rock outcrop-Bracos complex, 40 to 80 percent slopes- | 18,667 | --- | 18,667 | 1.2 |
| 211 | Angostura very cobbly loam, 15 to 40 percent slopes | 21,559 | --- | 21,559 | 1.4 |
| 214 | Quimera-Vamer very channery clay loams, 10 to 35 percent slopes- | 7,910 | --- | 7,910 | 0.5 |
| 215 | Saragote-Ess complex, 2 to 8 percent slopes-- | 24,716 | --- | 24,716 | 1.6 |
| 216 | Angostura very cobbly sandy loam, 15 to 45 percent slopes | 8,732 | --- | 8,732 | 0.6 |
| 220 | Rock outcrop-Vessilla-Menefee complex, 15 to 45 percent slopes | 104,029 | --- | 104,029 | 6.6 |
| 228 | Suposo-Brycan complex, 1 to 6 percent slopes- | 8,994 | --- | 8,994 | 0.6 |
| 230 | Badland------------------------------------- | 6,725 | --- | 6,725 | 0.4 |
| 240 | Riverwash------------------------------------ | 7,171 | --- | 7,171 | 0.5 |
| 241 | Florita-Rock outcrop complex, 15 to 45 percent slopes | 93,039 | --- | 93,039 | 5.9 |
| 242 | Tinaja-Rock outcrop complex, 45 to 75 percent slopes- | 56,179 | 1,441 | 57,620 | 3.6 |
| 243 | Penistaja fine sandy loam, 2 to 8 percent slopes | 14,459 | --- | 14,459 | 0.9 |
| 244 | Scholle-Silver loams, 1 to 5 percent slopes-- | 8,779 | --- | 8,779 | 0.6 |
| 245 | Maia-Manzano complex, 0 to 5 percent slopes-- | 7,360 | --- | 7,360 | 0.5 |
| 246 | Pena gravelly sandy loam, 2 to 15 percent slopes | 6,228 | 154 | 6,382 | 0.4 |
| 247 | Wenota silty clay loam, 1 to 6 percent slopes | 6,014 | --- | 6,014 | 0.4 |
| 248 | Hagerman-Silver fine sandy loams, 2 to 7 <br> percent slopes | 11,746 | --- | 11,746 | 0.7 |
| 249 | Losmarios extremely cobbly sandy clay loam, 10 to 35 percent slopes- | 6,268 | --- | 6,268 | 0.4 |
| 302 | Puye gravelly sandy loam, 3 to 15 percent slopes | 3,314 | 105 | 3,419 | 0.2 |
| 401 | Chiminet-Rock outcrop association, 5 to 40 percent slopes | 726 | 314 | 1,040 | * |

Table 4.--Acreage and proportionate extent of the soils

| Mapsymbol | Soil name | Rio Arriba County | Sandoval County | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Area | Extent |
|  |  | Acres | Acres | Acres | Pct. |
| 407 | Totavi gravelly loam, 1 to 8 percent slopes-- | 406 | 845 | 1,251 | * |
| 704 | Chrishall gravelly loam, 1 to 15 percent slopes | 287 | 802 | 1,089 | * |
| 710 | Calaveras-Palon very gravelly sandy loams, 40 to 80 percent slopes | 1,513 | 4,359 | 5,872 | 0.4 |
| 711 | Laventana cobbly loam, 15 to 40 percent slopes- | 17 | 868 | 885 | * |
| 719 | Alanos very cobbly loam, 15 to 50 percent slopes | 1,099 | 1,222 | 2,321 | 0.1 |
| 802 | Redondo gravelly sandy clay loam, 5 to 25 percent slopes | 313 | 1,190 | 1,503 | * |
| 803 | Rusbach cobbly sandy loam, 40 to 80 percent slopes | 964 | 2,609 | 3,573 | 0.2 |
| DAM | Dam- | 16 | -- | 16 | * |
| W | Water--------------------------------------- | 16,301 | - | 16,301 | 1.0 |
|  | Total | 1,565,622 | 15,852 | 1,581,474 | 100.0 |

* Less than 0.1 percent.

Table 5.--Irrigated and nonirrigated yields by map unit component
(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.)


Table 5.--Irrigated and nonirrigated yields by map unit component--Continued


Table 5.--Irrigated and nonirrigated yields by map unit component--Continued

| Map symbol and soil name | $\begin{gathered} \text { Land } \\ \text { capability } \end{gathered}$ |  | Alfalfa hay |  | Grass hay |  | Pasture |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | N | I | N | I | N | I | N | I |
|  |  |  | Tons | Tons | Tons | Tons | AUM | AUM |
| 170: |  |  |  |  |  |  |  |  |
| Sedillo- | 6 c | 3s | --- | 3.00 | 1.00 | 3.00 | 2.00 | 6.00 |
| 173 : |  |  |  |  |  |  |  |  |
| Oelop- | 6 c | 3 e | --- | 3.50 | --- | 3.50 | --- | 9.00 |
| 180: |  |  |  |  |  |  |  |  |
| Oelop- | 6 c | 3 e | --- | 3.50 | - | 3.50 | -- | 9.00 |
| 182 : |  |  |  |  |  |  |  |  |
| Oelop- | 6 c | 4 e | --- | 3.00 | --- | 3.00 | --- | 8.00 |
| 190 : |  |  |  |  |  |  |  |  |
| Sedillo- | 6 c | 3 e | --- | 3.50 | 1.00 | 3.50 | 2.00 | 6.00 |

Table 6.--Rangeland productivity
(Only the soils that support rangeland vegetation suitable for grazing are rated. A dashed line indicates either no vegetation or a forested site.)

| Map symbol and soil name | Ecological site | Total dry-weight production |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Favorable year | Normal year | Unfavorable year |
|  |  | Lb./acre | Lb./acre | Lb./acre |
| Pinavetes- | Sandy | 900 | 600 | 275 |
| Florita- | Loamy | 1,100 | 850 | 600 |
| 10 : |  |  |  |  |
| Sparank- | Salty Bottomland | 1,500 | 1,050 | 600 |
| San Mateo- | Salty Bottomland | 1,500 | 1,050 | 600 |
| 11: |  |  |  |  |
| Fruitland- | Sandy | 680 | 470 | 260 |
| 12: |  |  |  |  |
| Pinavetes- | Deep Sand | 900 | 588 | 275 |
| 18: |  |  |  |  |
| Abiquiu-- | --- | 3,000 | 2,250 | 1,500 |
| Peralta- | --- | 3,000 | 2,250 | 1,500 |
| 20 : |  |  |  |  |
| Menefee--------------- | --- | 800 | 600 | 400 |
| Vessilla-- | --- | 800 | 600 | 400 |
| Rock outcrop----------- | --- | --- | --- | --- |

Table 6.--Rangeland productivity--Continued

| Map symbol and soil name | Ecological site | Total dry-weight production |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Favorable year | Normal year | Unfavorable year |
|  |  | Lb./acre | Lb./acre | Lb./acre |
| Werlog- | Salty Bottomland | 1,500 | 1,050 | 600 |
| 22 : |  |  |  |  |
| Jocity- | Loamy | 950 | 663 | 375 |
| Gilco- | Loamy | 950 | 663 | 375 |
| 23 : |  |  |  |  |
| Gilco-- | Loamy | 950 | 663 | 375 |
| 24: |  |  |  |  |
| Jocity- | Loamy | 950 | 663 | 375 |
| 30: |  |  |  |  |
| San Mateo- | Salty Bottomland | 1,500 | 1,050 | 600 |
| 31: |  |  |  |  |
| Gobernador-- | Salty Bottomland | 1,500 | 1,050 | 600 |
| Orlie- | Loamy | 1,100 | 850 | 600 |
| 34: |  |  |  |  |
| Alcalde- | Clayey | 900 | 600 | 300 |
| 39: |  |  |  |  |
| Fruitland- | Sandy | 680 | 470 | 260 |
| 40: |  |  |  |  |
| Pinitos- | Loamy | 1,100 | 850 | 600 |
| Menefee- | --- | 800 | 600 | 400 |

Table 6.--Rangeland productivity--Continued

| Map symbol <br> and soil name | Ecological site |
| :--- | :--- | :--- | :--- | :--- | :--- |

Table 6.--Rangeland productivity--Continued

| Map symbol and soil name | Ecological site | Total dry-weight production |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Favorable year | Normal year | Unfavorable year |
|  |  | Lb./acre | Lb./acre | Lb./acre |
| 69 : |  |  |  |  |
| Lindrith------------------------- \| | Loamy | 1,100 | 850 | 600 |
| Royosa--------------------------- | Sandy | 900 | 600 | 275 |
| 70 : |  |  |  |  |
| Sparham-------------------------- \| | Salt Meadow | 2,000 | 1,600 | 1,200 |
| 80 : |  |  |  |  |
| Orlie---------------------------- \| | Loamy | 1,100 | 850 | 600 |
| Nalivag------------------------- \| | Loamy | 1,100 | 850 | 600 |
| 102 : |  |  |  |  |
| Menefee-------------------------- | --- | 800 | 600 | 400 |
| Nalivag--------------------------- | Loamy | 1,100 | 850 | 600 |
| 103 : |  |  |  |  |
| Orlie---------------------------- \| | Loamy | 1,100 | 850 | 600 |
| 106: |  |  |  |  |
| Amal----------------------------- | --- | 800 | 600 | 400 |
| 107: |  |  |  |  |
| Berryman------------------------- \| | Clayey | 1,200 | 900 | 600 |
| Ruson----------------------------- | Swale | 1,700 | 1,250 | 800 |
| 108: |  |  |  |  |
| Peney-------------------------- \| | --- | 800 | 600 | 400 |

Table 6.--Rangeland productivity--Continued

| Map symbol and soil name | Ecological site | Total dry-weight production |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Favorable year | Normal year | Unfavorable year |
|  |  | Lb./acre | Lb./acre | Lb./acre |
| 108: |  |  |  |  |
| Ransect------------- | --- | 800 | 600 | 400 |
| 109: |  |  |  |  |
| Calendar-------------- | --- | 800 | 600 | 400 |
| 110: |  |  |  |  |
| Vessilla-- | --- | 800 | 600 | 400 |
| Menefee--- | --- | 800 | 600 | 400 |
| Orlie--- | Loamy | 1,100 | 850 | 600 |
| 113 : |  |  |  |  |
| Teromote- | Loamy | 1,100 | 850 | 600 |
| Ruson- | Swale | 1,700 | 1,250 | 800 |
| 115: |  |  |  |  |
| Menefee-- | --- | 800 | 600 | 400 |
| $117 \text { : }$ |  |  |  |  |
| Chamita | Mountain Meadow | 3,500 | 2,800 | 2,400 |
| 118 : |  |  |  |  |
| Hesperus--- | Mountain Loam | 1,400 | 1,000 | 700 |
| Pastorius-- | Mountain Loam | 1,400 | 1,000 | 700 |
| Chamita--- | Mountain Meadow | 3,500 | 2,800 | 2,400 |

Table 6.--Rangeland productivity--Continued


Table 6.--Rangeland productivity--Continued

| Map symbol <br> and soil name | Ecological site |
| :--- | :--- | :--- | :--- | :--- |

Table 6.--Rangeland productivity--Continued


Table 6.--Rangeland productivity--Continued

| Map symbol <br> and soil name | Ecological site | Total dry-weight production |
| :--- | :--- | :--- | :--- | :--- |

Table 6.--Rangeland productivity--Continued

| Map symbol and soil name | Ecological site | Total dry-weight production |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Favorable year | Normal year | Unfavorable year |
|  |  | Lb./acre | Lb./acre | Lb./acre |
| 209: |  |  |  |  |
| Crubas - | Mountain Meadow | 3,500 | 2,800 | 2,400 |
| Bywell- | Mountain Meadow | 3,500 | 2,800 | 2,400 |
| Croftshaw- | Subalpine Grassland | 1,800 | 1,300 | 600 |
| 210: |  |  |  |  |
| Rock outcrop-- | --- | --- | --- | --- |
| Bracos-- | --- | 600 | 300 | 200 |
| 211: |  |  |  |  |
| Angostura- | - | 450 | 350 | 200 |
| 214 : |  |  |  |  |
| Quimera-- | Mountain Brush | 1,200 | 900 | 500 |
| Vamer- | Mountain Brush | 1,200 | 900 | 500 |
| 215 : |  |  |  |  |
| Saragote-- | --- | 450 | 350 | 200 |
| Ess- | Subalpine Grassland | 1,600 | 1,200 | 800 |
| 216: |  |  |  |  |
| Angostura-- | --- | 450 | 350 | 200 |
| 220 : |  |  |  |  |
| Rock outcrop------ | - | --- | --- | --- |
| Vessilla--------------- | --- | 800 | 600 | 400 |

Table 6.--Rangeland productivity--Continued

| Map symbol and soil name | Ecological site | Total dry-weight production |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Favorable year | Normal year | Unfavorable year |
|  |  | Lb./acre | Lb./acre | Lb./acre |
| 220: |  |  |  |  |
| Menefee- | --- | 800 | 600 | 400 |
| 228 : |  |  |  |  |
| Suposo-- | Mountain Shale | 1,200 | 900 | 500 |
| Brycan-- | Mountain Shale | 1,800 | 1,300 | 600 |
| 230: |  |  |  |  |
| Badland------------- | --- | --- | --- | --- |
| 240: |  |  |  |  |
| Riverwash, gravelly--- | --- | --- | --- | --- |
| 241: |  |  |  |  |
| Florita- | Gravelly Hills | 500 | 300 | 200 |
| Rock outcrop--------- | --- | --- | --- | --- |
| 242: |  |  |  |  |
| Tinaja- | --- | 1,100 | 800 | 500 |
| Rock outcrop- | --- | --- | --- | --- |
| 243: |  |  |  |  |
| Penistaja- | Loamy | 950 | 663 | 375 |
| 244: |  |  |  |  |
| Scholle- | Loamy | 950 | 663 | 375 |
| Silver---- | Loamy | 950 | 663 | 375 |

Table 6.--Rangeland productivity--Continued

| Map symbol and soil name | Ecological site | Total dry-weight production |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Favorable year | Normal year | Unfavorable year |
|  |  | Lb./acre | Lb./acre | Lb./acre |
| 245 : |  |  |  |  |
| Maia- | Loamy | 950 | 663 | 375 |
| Manzano- | Swale | 1,700 | 1,250 | 800 |
| 246: |  |  |  |  |
| Pena-- | --- | 1,100 | 800 | 500 |
| 247: |  |  |  |  |
| Wenota-- | Clayey Bottomland | 3,232 | 2,248 | 1,263 |
| 248: |  |  |  |  |
| Hagerman- | Loamy | 950 | 663 | 375 |
| Silver--- | Loamy | 950 | 663 | 375 |
| $249:$ |  |  |  |  |
| Losmarios- | Gravelly | 900 | 625 | 350 |
| 302: |  |  |  |  |
| Puye- | -- | 900 | 650 | 400 |
| 401: |  |  |  |  |
| Chiminet------------- | --- | 800 | 600 | 400 |
| Rock outcrop---- | --- | --- | --- | --- |
| 407: |  |  |  |  |
| Totavi--------------- | --- | 900 | 650 | 400 |
| 704: |  |  |  |  |
| Chrishall-- | Mountain Loam | 1,400 | 1,000 | 700 |

Table 6.--Rangeland productivity--Continued


Table 7.--Forestland productivity
(Only those map units and soils with harvestable trees are shown.)


Table 7.--Forestland productivity--Continued


Table 7.--Forestland productivity--Continued


Table 7.--Forestland productivity--Continued


Table 8.--Camp areas, picnic areas, and playgrounds
(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.)


Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | \|Value | Rating class and limiting features | \|Value |
|  |  |  |  |  |  |  |  |
| 18: <br> Abiquiu | 50 | Very limited Flooding | 1.00 | Not limited |  | Somewhat limited Flooding | 0.60 |
| Peralta- | 40 | Very limited Flooding Too sandy | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.92 \end{aligned}\right.$ | Somewhat limited Too sandy | 0.92 | Somewhat limited <br> Too sandy <br> Flooding | $\left\lvert\, \begin{aligned} & 0.92 \\ & 0.60 \end{aligned}\right.$ |
| $20:$ |  |  |  |  |  |  |  |
|  |  | slope | 1.00 | Slope | 1.00 | Depth to bedrock | 1.00 |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 | Slope | 1.00 |
|  |  | Slow water movement | 0.41 | Slow water movement | \| 0.41 | Slow water movement | 0.41 |
| Vessilla- | 30 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Depth to bedrock } \end{aligned}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Depth to bedrock } \end{aligned}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | Very limited Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ |
| Rock outcrop-- | 15 | Not rated |  | Not rated |  | Not rated |  |
| 21: |  |  |  |  |  |  |  |
| Werlog- | 85 | Very limited Flooding | 1.00 | Not limited |  | Not limited |  |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\begin{array}{\|c} \text { Pct. } \\ \left\lvert\, \begin{array}{c} \text { of } \\ \mid \text { map } \\ \mid \text { unit } \end{array}\right. \\ \hline \end{array}$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| ```22: Jocity-``` | 50 | Not limited |  | Not limited |  | Not limited |  |
| Gilco | 35 | Somewhat limited Too sandy | 0.79 | Somewhat limited Too sandy | 0.79 | Somewhat limited Too sandy | 0.79 |
| Gilco-- | 85 | Not limited |  | Not limited |  | Not limited |  |
| 24: Jocity- | 85 | Not limited |  | Not limited |  | Not limited |  |
| 30 : |  |  |  |  |  |  |  |
| San Mateo--- | 85 | Very limited Sodium content Flooding | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ | Very limited Sodium content | 1.00 | Very limited Sodium content | 1.00 |
| $31:$ |  |  |  |  |  |  |  |
| Gobernador- | 50 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Sodium content | 1.00 | Sodium content | 1.00 | Sodium content | 1.00 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Slow water movement | 0.41 |
| Orlie----------- | 40 | Somewhat limited |  | Somewhat limited |  | Very limited |  |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Gravel content | 1.00 |
|  |  | Gravel content | 0.01 | Gravel content | 0.01 | Slope | 0.88 |
|  |  |  |  |  |  | Dusty | 0.50 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $\begin{aligned} & 60: \\ & \text { Sparham } \end{aligned}$ | 85 | Very limited Flooding | 1.00 | Somewhat limited Slow water movement | 0.45 | Somewhat limited Slow water movement | 0.45 |
|  |  | Slow water movement | 0.45 |  |  |  |  |
| 61: Colomex | 85 | Somewhat limited Gravel content | 0.38 | Somewhat limited Gravel content | 0.38 | Very limited Gravel content | 1.00 |
| 64 : |  |  |  |  |  |  |  |
|  |  | Depth to saturated zone Flooding | 1.00 1.00 | Depth to saturated zone Flooding | 0.90 0.40 | Depth to saturated zone Flooding | 1.00 1.00 |
| $65:$ |  |  |  |  |  |  |  |
|  |  | Slow water movement | 0.43 | Slow water movement | 0.43 | Slow water movement Gravel content | 0.43 0.22 |
| 66 : |  |  |  |  |  |  |  |
| Encicado--- | 90 | Very limited Flooding | 1.00 | Somewhat limited Slow water movement | 0.21 | Somewhat limited Flooding | 0.60 |
|  |  | Slow water movement | 0.21 |  |  | Slow water movement | 0.21 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol <br> and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 69 : |  |  |  |  |  |  |  |
| Lindrith-------- | 50 | Not limited |  | Not limited |  | Somewhat limited Slope | $\begin{aligned} & 0.88 \\ & 0.14 \end{aligned}$ |
| Royosa---------- | 35 | Somewhat limited Too sandy | 0.95 | Somewhat limited Too sandy | 0.95 | Somewhat limited | 0.95 |
|  |  |  |  |  |  | slope | 0.88 |
| 70 : |  |  |  |  |  |  |  |
| Sparham--------- | 80 | Very limited  <br> Sodium content 1.00 |  | Very limited |  | Very limited |  |
|  |  |  |  | Sodium content | 1.00 | Sodium content | 1.00 |
|  |  | Salinity | 1.00 | Salinity | 1.00 | Salinity | 1.00 |
|  |  | Flooding | 1.00 | Slow water movement | 0.45 | Gravel content | 0.68 |
|  |  | Slow water movement | 0.45 |  |  | Slow water movement | 0.45 |
| 80 : |  |  |  |  |  |  |  |
| Orlie---------- | 45 | Somewhat limitedDusty |  | Somewhat limited |  | Very limited |  |
|  |  |  | 0.50 | Dusty | 0.50 | Gravel content | 1.00 |
|  |  | Gravel content | 0.01 | Gravel content | 0.01 | Slope | 0.88 |
|  |  |  |  |  |  | Dusty | 0.50 |
| Nalivag--- | 35 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.88 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 102: |  |  |  |  |  |  |  |
| Menefee-------- | 40 | Very limited \| |  | Very limitedSlope | 1.00 | Very limited |  |
|  |  | \| Slope | 1.00 |  |  | \| Slope | 1.00 |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Slow water movement | 0.41 |
| Nalivag--------- | 40 | Somewhat limited slope | 0.63 | Somewhat limited Slope | 0.63 | Very limited Slope | 1.00 |
| 103: |  |  |  |  |  |  |  |
| Orlie----------- | 80 | Somewhat limited Gravel content |  | Somewhat limited Gravel content | 0.01 | Very limited |  |
|  |  |  | 0.01 |  |  | Gravel content | 1.00 |
|  |  |  |  |  |  | Slope | 0.88 |
| 106: |  |  |  |  |  |  |  |
| Amal | 85 | Somewhat limited Dusty |  | Somewhat limited Dusty | 0.50 | Somewhat limited |  |
|  |  |  | 0.50 |  |  |  | 0.88 |
|  |  |  |  |  |  | Dusty | 0.50 |
| 107: |  |  |  |  |  |  |  |
| Berryman-------- | 55 | Somewhat limitedDusty |  | Somewhat limited |  | Very limited |  |
|  |  |  | 0.50 | Dusty | 0.50 | Slope | 1.00 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Dusty | 0.50 |
|  |  |  |  |  |  | Slow water movement | 0.41 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $107:$Ruson | 30 |  | 0.41 |  | 0.41 |  |  |
|  |  | Somewhat limited <br> Slow water <br> movement <br> Gravel content |  | Somewhat limited Slow water movement |  | Very limited <br> Gravel content | 1.00 |
|  |  |  | 0.01 | Gravel content | 0.01 | Slow water movement | 0.41 |
| 108: |  |  |  |  |  |  |  |
| Peney | 50 | Very limited Depth to bedrock Gravel content Slope |  | Very limited |  | \|Very limited |  |
|  |  |  | 1.00 | Depth to bedrock | 1.00 | \| Gravel content | 1.00 |
|  |  |  | 0.92 | Gravel content | 0.92 | Depth to bedrock | 1.00 |
|  |  |  | 0.63 | Slope | 0.63 | slope | 1.00 |
| Ransect--------- | 35 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.50 |
|  |  |  |  |  |  | Depth to bedrock | 0.01 |
| 109: |  |  |  |  |  |  |  |
| Calendar------- | 85 | Very limitedSlope |  | Very limitedSlope | 1.00 | \|Very limited |  |
|  |  |  | 11.00 |  |  | Gravel content | 1.00 |
|  |  | Gravel content | 0.95 | Gravel content | 0.95 | Slope | 1.00 |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Dusty | 0.50 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Slow water movement | 0.41 |
|  |  |  |  |  |  | Depth to bedrock | 0.10 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \mid \text { unit } \end{gathered}\right.$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \| Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 115: |  |  |  |  |  |  |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Gravel content | 1.00 |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 | Slope | 1.00 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Depth to bedrock | 1.00 |
|  |  | Gravel content | 0.22 | Gravel content | 0.22 | Slow water movement | 0.41 |
| 117: |  |  |  |  |  |  |  |
| Chamita- | 85 | \|Very limited Flooding | 1.00 | Somewhat limited Depth to | 0.75 | Very limited Flooding | 1.00 |
|  |  |  |  | saturated zone |  |  |  |
|  |  | Depth to saturated zone | 0.98 | Flooding | 0.40 | Depth to saturated zone | 0.98 |
| 118: |  |  |  |  |  |  |  |
| Hesperus------- | 35 | \| Not limited |  | Not limited |  | Somewhat limited Slope | 0.12 |
|  |  |  |  |  |  | Gravel content | 0.02 |
| Pastorius------- | 25 | Not limited |  | Not limited |  | Somewhat limited Slope <br> Gravel content | $\left\lvert\, \begin{aligned} & 0.12 \\ & 0.01 \end{aligned}\right.$ |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $\begin{aligned} & 127: \\ & \text { Rombo } \end{aligned}$ | 45 |  | 1.00 | Very limited |  | Very limited |  |
|  |  | slope |  | Slope | 1.00 | Slope | 1.00 |
|  |  | Too clayey | 0.50 | Too clayey | 0.50 | Too clayey | 0.50 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Slow water movement | 0.41 |
|  |  |  |  |  |  | Gravel content | 0.14 |
|  |  |  |  |  |  | Depth to bedrock | 0.03 |
| Wiggler--------- | 40 | ```Very limited Slope Depth to bedrock Gravel content``` |  | Very limited |  | Very limited |  |
|  |  |  | 1.00 | Slope | 1.00 | Gravel content | 1.00 |
|  |  |  | 1.00 | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 |
|  |  |  | 0.88 | Gravel content | 0.88 | Slope | 1.00 |
| 129 : |  |  |  |  |  |  |  |
| Nusmag- | 45 | Very limited Slow water movement |  | Very limited |  | Very limited Slow water movement |  |
|  |  |  | 11.00 | Slow water movement | 1.00 |  | 1.00 |
| Tottles-------- | 35 | Somewhat limited <br> Depth to saturated zone Slow water movement |  | Somewhat limited |  | Somewhat limited |  |
|  |  |  | 0.98 | Slow water movement | 0.96 | Depth to saturated zone | 0.98 |
|  |  |  | 0.96 | Depth to saturated zone | 0.75 | Slow water movement | 0.96 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 130: |  |  |  |  |  |  |  |
| Topetaul------- | 45 | Somewhat limited |  | Somewhat limited |  | Very limited |  |
|  |  | Slope | 0.96 | Slope | 0.96 | Slope | 1.00 |
|  |  | Slow water movement | 0.96 | Slow water movement | 0.96 | Slow water movement | 0.96 |
|  |  | Large stones | 0.08 | Large stones | 0.08 | Gravel content | 0.08 |
|  |  | content |  | content |  | Large stones content | 0.08 |
| Hogg------------ | 35 | Somewhat limitedSlope |  | Somewhat limited |  | Very limited |  |
|  |  |  | 0.96 | Slope | 0.96 | Slope | 1.00 |
|  |  | Slow water movement | 0.96 | Slow water movement | 0.96 | Slow water movement | 0.96 |
|  |  |  |  |  |  | Gravel content | 0.44 |
| 132: |  |  |  |  |  |  |  |
| Stout- | 40 | Very limited Depth to bedrock |  | Very limited |  | Very limited |  |
|  |  |  | 1.00 |  | 1.00 | Depth to bedrock | 1.00 |
|  |  | Slope | 0.84 | Slope | 0.84 | Slope | 1.00 |
|  |  | Large stones content | 0.02 | Large stones content | 0.02 | Large stones content | 0.02 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 132: |  |  |  |  |  |  |  |
| Carjo----------- | 20 | Somewhat limited Slow water movement | 0.96 | Somewhat limited Slow water movement | 0.96 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
|  |  | Slope | 0.84 | Slope | 0.84 | Gravel content | 0.97 |
|  |  | Large stones content | 0.23 | Large stones content | 0.23 | Slow water movement | 0.96 |
|  |  |  |  |  |  | Large stones content <br> Depth to bedrock | 0.23 0.01 |
|  |  |  |  |  |  | Depth to bedrock | 0.01 |
| Rock outcrop-------- | 20 | Not rated |  | Not rated |  | Not rated |  |
| 133 : |  |  |  |  |  |  |  |
| Carrick--------- | 90 | Somewhat limited Slow water movement | 0.96 | Somewhat limited Slow water movement | 0.96 | ```Somewhat limited Slow water movement Slope``` | 0.96 0.12 |
| 136: |  |  |  |  |  |  |  |
| Elpedro--------- | 80 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | Somewhat limited |  |
|  |  |  |  |  |  | Dusty | 0.50 |
|  |  |  |  |  |  | Slope | 0.12 |
| 137: |  |  |  |  |  |  |  |
| Yata | 50 | Very limited Slope Slow water movement | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.96 \end{aligned}\right.$ | Very limited | 1.00 | Very limited | 1.00 |
|  |  |  |  | Slope |  | Slope |  |
|  |  |  |  | Slow water movement | 0.96 | Slow water movement | 0.96 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $137 \text { : }$ |  |  |  |  |  |  |  |
|  | 40 | Very limited |  | slope | 1.00 | slope | 1.00 |
|  |  | Slow water movement | 0.96 | Slow water movement | 0.96 | Slow water movement | 0.96 |
| 140: |  |  |  |  |  |  |  |
| Espiritu-------- | 45 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Gravel content | 1.00 |
|  |  | Large stones content | 0.20 | Large stones content | 0.20 | Dusty | 0.50 |
|  |  | Gravel content | 0.01 | Gravel content | 0.01 | Large stones content | 0.20 |
| Wauquie--------- | 35 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | slope | 1.00 |
|  |  | Gravel content | 0.55 | Gravel content | 0.55 | Gravel content | 1.00 |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Dusty | 0.50 |
|  |  | Large stones content | 0.01 | Large stones content | 0.01 | Large stones content | 0.01 |
| 141: |  |  |  |  |  |  |  |
| Capillo--------- | 35 | Somewhat limited Slow water movement | 0.96 | Somewhat limited Slow water movement | 0.96 | Very limited |  |
|  |  |  |  |  |  | Slope | 1.00 |
|  |  |  |  |  |  | Slow water movement | 0.96 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $\begin{aligned} & 149: \\ & \text { Yarts }- \end{aligned}$ | 80 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.12 |
| Razito-- | 45 | Somewhat limited Too sandy | 0.84 | Somewhat limited Too sandy | 0.84 | Somewhat limited <br> Too sandy <br> Slope | $\left\lvert\, \begin{aligned} & 0.84 \\ & 0.12 \end{aligned}\right.$ |
| Fruitland----- | 40 | Not limited |  | Not limited |  | Somewhat limited Gravel content Slope | $\left\lvert\, \begin{aligned} & 0.68 \\ & 0.12 \end{aligned}\right.$ |
| ```\[ 170 \text { : } \] Sedillo``` | 85 | Somewhat limited |  | Somewhat limited |  | Somewhat limited |  |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Gravel content <br> Dusty <br> Slope | $\left\lvert\, \begin{aligned} & 0.80 \\ & 0.50 \\ & 0.12 \end{aligned}\right.$ |
| $\begin{aligned} & 173 \text { : } \\ & \text { Oelop- } \end{aligned}$ | 85 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.12 |
| Oelop- | 90 | \|Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | ```Somewhat limited Dusty Slope``` | $\left\lvert\, \begin{aligned} & 0.50 \\ & 0.12 \end{aligned}\right.$ |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds-Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 206: |  |  |  |  |  |  |  |
| Angostura------- | 60 | Very limitedSlope | 1.00 | Very limited Slope | 1.00 | Very limited | 1.00 |
|  |  |  |  | Slope |  | Slope |  |
|  |  | slow water movement | 0.21 | Slow water movement | 0.21 | Gravel content | 0.98 |
|  |  |  |  |  |  | Slow water | 0.21 |
| Gromes---------- | 25 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Slow water movement | 0.21 | Slow water movement | 0.21 | Gravel content | 1.00 |
|  |  | Gravel content | 0.13 | Gravel content | 0.13 | Slow water movement | 0.21 |
| 207: |  |  |  |  |  |  |  |
| Gromes--------- | 65 | Very limitedSlope |  | Very limited |  | Very limited |  |
|  |  |  | 1.00 | slope | 1.00 | slope | 1.00 |
|  |  | Slow water movement | 0.21 | Slow water movement | 0.21 | Gravel content Slow water movement | 0.34 |
|  |  |  |  |  |  |  | 0.21 |
| Rock outcrop---- | 20 | Not rated |  | Not rated |  | Not rated |  |
| 208: |  |  |  |  |  |  |  |
| Ess------------ | 45 | Somewhat limitedGravel contentSlope | 0.04 | Somewhat limitedGravel content | 0.04 | Very limited | 1.00 |
|  |  |  |  |  |  | Slope |  |
|  |  |  | 0.04 | Slope | 0.04 | Gravel content | 1.00 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | \|Value |
| 208: |  |  |  |  |  |  |  |
| Croftshaw- | 35 | Somewhat limited |  | Somewhat limited |  | Very limited |  |
|  |  | slope | 0.63 | Slope | 0.63 | Slope | 1.00 |
|  |  | Slow water | 0.21 | Slow water | 0.21 | Gravel content | 10.44 |
|  |  | movement |  | movement |  | Slow water | 0.21 |
|  |  |  |  |  |  | movement |  |
| 209: |  |  |  |  |  |  |  |
| Crubas- | 40 | Not rated |  | Not rated |  | Not rated |  |
| Bywell---------- | 30 | ```Very limited Depth to saturated zone Flooding``` | 1.00 | ```Somewhat limited Depth to saturated zone Flooding``` | 0.94 | Very limited |  |
|  |  |  |  |  |  | Depth to | 1.00 |
|  |  |  | 1.00 |  | 0.40 | saturated zone Flooding | 1.00 |
|  |  |  |  |  |  | Gravel content | 0.44 |
| Croftshaw------- | 20 | ```Somewhat limited Slow water movement Slope``` |  | Somewhat limited Slow water movement | 0.21 |  | 1.00 |
|  |  |  | 0.21 |  |  | slope |  |
|  |  |  | 0.16 | Slope | 0.16 | Gravel content | 0.44 |
|  |  |  |  |  |  | Slow water movement | 0.21 |
| 210: |  |  |  |  |  |  |  |
| Rock outcrop- | 60 | Not rated |  | Not rated |  | Not rated |  |
| Bracos- | 30 | Not rated |  | Not rated |  | Not rated |  |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 216: |  |  |  |  |  |  |  |
| Angostura- | 85 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Large stones | 0.29 | Large stones | 0.29 | Gravel content | 0.68 |
|  |  | content |  | content |  | Large stones content | 0.29 |
| 220 : |  |  |  |  |  |  |  |
| Rock outcrop- | 40 | Not rated |  | Not rated |  | Not rated |  |
| Vessilla-------- | 30 | Very limited |  | Very limited |  | Very limited |  |
|  |  | slope | 1.00 | slope | 1.00 | slope | 1.00 |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 |
| Menefee--------- | 20 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Slow water movement | 0.41 |
| 228: |  |  |  |  |  |  |  |
| Suposo- | 50 | Somewhat limited Slow water movement | 0.96 | Somewhat limited Slow water movement | 0.96 | ```Somewhat limited Slow water movement slope``` | 0.96 |
|  |  |  |  |  |  |  | 0.50 |
| Brycan--------- | 35 | Very limited Flooding | 1.00 | Not limited |  | Somewhat limited Flooding | 0.60 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left.\begin{array}{\|c} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \mid \text { unit } \end{array} \right\rvert\,$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $230:$ |  |  |  |  |  |  |  |
| Riverwash, gravelly- | 100 | Very limited |  | Very limited |  | \|Very limited |  |
|  |  | Depth to | 1.00 | Too sandy | 1.00 | Depth to | 1.00 |
|  |  | Flooding | 1.00 | Gravel content | 1.00 | Too sandy | 1.00 |
|  |  | Too sandy | 11.00 | Depth to saturated zone | 0.99 | Flooding | 1.00 |
|  |  | Gravel content | 1.00 | Flooding | 0.40 | Gravel content | 1.00 |
| 241: |  |  |  |  |  |  |  |
| Florita------------ | 55 | Very limited |  | Very limited |  | \|Very limited |  |
|  |  | Slope | 1.00 | slope | 1.00 | Slope | 1.00 |
|  |  | Gravel content | 0.68 | Gravel content | 0.68 | Gravel content | 1.00 |
| Rock outcrop-------- | 25 | Not rated |  | Not rated |  | Not rated |  |
| Tinaja------------- | 50 | Very limited |  | Very limited |  | Very limited |  |
|  |  | slope | 1.00 | slope | 1.00 | slope | 1.00 |
|  |  | Gravel content | 0.79 | Gravel content | 0.79 | Gravel content | 1.00 |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Dusty | 0.50 |
|  |  | Large stones content | 0.18 | Large stones content | 0.18 | Large stones content | 0.18 |
| Rock outcrop-------- | 30 | Not rated |  | Not rated |  | Not rated |  |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | $\left.\begin{array}{\|c} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \mid \text { unit } \end{array} \right\rvert\,$ | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 243: <br> Penistaja | 85 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.88 |
| Scholle- | 60 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | Somewhat limited Gravel content Dusty Slope | $\left\lvert\, \begin{aligned} & 0.99 \\ & 0.50 \\ & 0.12 \end{aligned}\right.$ |
| Silver--- | 30 | ```Somewhat limited Dusty Slow water movement``` | $\begin{array}{\|l\|} 0.50 \\ 0.41 \end{array}$ | ```Somewhat limited Dusty Slow water movement``` | $\left\lvert\, \begin{aligned} & 0.50 \\ & 0.41 \end{aligned}\right.$ | Somewhat limited <br> Dusty <br> Slow water movement slope | $\left\lvert\, \begin{aligned} & 0.50 \\ & 0.41 \\ & 0.12 \end{aligned}\right.$ |
| $245:$ <br> Maia | 65 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | Somewhat limited <br> Dusty <br> Gravel content Slope | $\left\lvert\, \begin{aligned} & 0.50 \\ & 0.22 \\ & 0.12 \end{aligned}\right.$ |
| Manzano-- | 20 | Very limited Flooding | 1.00 | Not limited |  | Somewhat limited Flooding | 0.60 |
| $246:$ <br> Pena | 85 | Somewhat limited Gravel content Slope | $\left\lvert\, \begin{aligned} & 0.54 \\ & 0.04 \end{aligned}\right.$ | Somewhat limited Gravel content Slope | $\left\lvert\, \begin{aligned} & 0.54 \\ & \mid 0.04 \end{aligned}\right.$ | Very limited Gravel content Slope | $\text { \| } 1.00$ |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 247: |  |  |  |  |  |  |  |
| Wenota---------- | 85 | Very limited Flooding | 1.00 | Somewhat limited Slow water movement | 0.41 | Somewhat limited Flooding | 0.60 |
|  |  | Slow water | 0.41 |  |  | Slope | 0.50 |
|  |  | movement |  |  |  | Slow water movement | 0.41 |
| 248: |  |  |  |  |  |  |  |
| Hagerman-------- | 45 | Not limited |  | Not limited |  | Somewhat limited Depth to bedrock Slope | 0.90 |
|  |  |  |  |  |  |  | 0.88 |
| Silver---------- | 40 | Somewhat limited Slow water movement | 0.41 | Somewhat limited Slow water movement | 0.41 | Somewhat limited | 0.88 |
|  |  |  |  |  |  | Slow water | 0.41 |
| Losmarios------- | 85 | Very limited |  | Very limited |  | Very limited |  |
|  |  | slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Large stones content | 0.61 | Large stones content | 0.61 | Gravel content | 1.00 |
|  |  | Slow water movement | 0.41 | Slow water movement | 0.41 | Large stones content | 0.61 |
|  |  | Gravel content | 0.01 | Gravel content | 0.01 | Slow water movement | 0.41 |

Table 8.--Camp areas, picnic areas, and playgrounds--Continued


Table 8.--Camp areas, picnic areas, and playgrounds--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Camp areas |  | Picnic areas |  | Playgrounds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 711: |  |  |  |  |  |  |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Large stones | 0.01 | Large stones | 0.01 | Gravel content | 0.25 |
|  |  | content |  | content |  | Large stones content | 0.01 |
| 719 : |  |  |  |  |  |  |  |
| Alanos- | 80 | Not rated |  | Not rated |  | Not rated |  |
| 802: |  |  |  |  |  |  |  |
| Redondo-- | 85 | Not rated |  | Not rated |  | Not rated |  |
| 803: |  |  |  |  |  |  |  |
| Rusbach----- | 85 | Not rated |  | Not rated |  | Not rated |  |
| DAM: |  |  |  |  |  |  |  |
| Dam- | 100 | Not rated |  | Not rated |  | Not rated |  |
| W: |  |  |  |  |  |  |  |
| Water----------- | 100 | Not rated |  | Not rated |  | Not rated |  |

(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. <br> of <br> map <br> unit | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $9 \text { : }$ <br> Pinavetes | 50 | Somewhat limited Too sandy | 0.84 | Somewhat limited Too sandy | 0.84 | Somewhat limited Droughty | 0.91 |
| Florita----- | 40 | Not limited |  | Not limited |  | Not limited |  |
| Sparank-- | 55 | \|Somewhat limited | 0.50 | Somewhat limited Dusty | 0.50 | Very limited Sodium content | 1.00 |
| San Mateo-- | 30 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | Very limited Sodium content | 1.00 |
| Fruitland--- | 85 | Not limited |  | Not limited |  | Not limited |  |
| 12: <br> Pinavetes | 85 | Somewhat limited <br> Too sandy | 0.84 | Somewhat limited Too sandy | 0.84 | Somewhat limited Droughty | 0.91 |
| 18: <br> Abiquiu | 50 | Not limited |  | Not limited |  | Very limited Droughty Flooding | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.60 \end{aligned}\right.$ |

Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \end{gathered}\right.$ | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 40: |  |  |  |  |  |  |  |
| Menefee-------- | 20 | Not limited |  | Not limited |  | Very limited |  |
|  |  |  |  |  |  | Depth to bedrock | 1.00 |
|  |  |  |  |  |  | Droughty | 0.99 |
|  |  |  |  |  |  | Slope | 0.84 |
| Vessilla-------- | 20 | Not limited |  | Not limited |  | ery limite |  |
|  |  |  |  |  |  | Droughty | 1.00 |
|  |  |  |  |  |  | Depth to bedrock | 1.00 |
|  |  |  |  |  |  | Slope | 0.84 |
|  |  |  |  |  |  | Large stones content | 0.01 |
| 42 : |  |  |  |  |  |  |  |
| Walrees--------- | 45 | Not limited |  | Not limited |  | Somewhat limited Flooding Salinity |  |
|  |  |  |  |  |  |  | 0.60 |
|  |  |  |  |  |  |  | 0.13 |
| Abiquiu-------- | 40 | Not limited |  | Not limited |  | $\begin{array}{\|l} \text { Somewhat limited } \\ \text { Droughty } \\ \text { Flooding } \end{array}$ |  |
|  |  |  |  |  |  |  | 0.95 |
|  |  |  |  |  |  |  | 0.60 |
| 50 : |  |  |  |  |  |  |  |
| Stout- | 45 | Not rated |  | Not rated |  | Not rated |  |
| Kunz------------ | 40 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.16 |

Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | Pct. | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 54 : Capillo | 90 | Not limited |  | Not limited |  | Not limited |  |
| Sparham------------ | 85 | Not limited |  | Not limited |  | Not limited |  |
| Colomex------------ | 85 | Not limited |  | Not limited |  | Somewhat limited |  |
|  |  |  |  |  |  | Gravel content | 0.38 |
|  |  |  |  |  |  | Droughty | 0.08 |
|  |  |  |  |  |  | Large stones content | 0.08 |
| 64 : |  |  |  |  |  |  |  |
| Dula--------------- | 90 | Somewhat limited |  | Somewhat limited |  | \|Very limited |  |
|  |  | Depth to | 0.78 | Depth to | 0.78 | Flooding | 1.00 |
|  |  | Flooding | 0.40 | Flooding | 0.40 | Depth to saturated zone | 0.90 |
| 65 : |  |  |  |  |  |  |  |
| Doslomas----------- | 85 | Not limited |  | Not limited |  | Not limited |  |
| 66: |  |  |  |  |  |  |  |
| Encicado----------- | 90 | Not limited |  | Not limited |  | Somewhat limited Flooding | 0.60 |
| 69 : |  |  |  |  |  |  |  |
| Lindrith----------- | 50 | Not limited |  | Not limited |  | Not limited |  |

Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | $\begin{array}{\|c} \text { Pct. } \\ \left\lvert\, \begin{array}{c} \text { of } \\ \mid \text { map } \\ \mid \text { unit } \end{array}\right. \\ \hline \end{array}$ | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 69 : |  |  |  |  |  |  |  |
|  |  | Too sandy | 0.95 | Too sandy | 0.95 | Droughty | 0.69 |
| Sparham--------- | 80 | Not limited |  | Not limited |  | Very limited |  |
|  |  |  |  |  |  | Salinity | 1.00 |
|  |  |  |  |  |  | Sodium content | 1.00 |
|  |  |  |  |  |  | Droughty | 0.09 |
| 80: |  |  |  |  |  |  |  |
| Orlie----------- | 45 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | Somewhat limited Gravel content | 0.01 |
| Nalivag------------ \| | 35 | Not limited |  | Not limited |  | Not limited |  |
| 102: |  |  |  |  |  |  |  |
| Menefee-------- | 40 | $\begin{aligned} & \text { Somewhat limited } \\ & \text { Slope } \end{aligned}$ | 0.08 | Not limited |  | ```Very limited Depth to bedrock Slope Droughty``` | 1.00 |
|  |  |  |  |  |  |  | 1.00 |
|  |  |  |  |  |  |  | 0.63 |
| Nalivag--------- | 40 | $\begin{aligned} & \text { \|Very limited } \\ & \text { Water erosion } \end{aligned}$ | 1.00 | Very limited Water erosion | 1.00 | Somewhat limited Slope | 0.63 |
| 103: |  |  |  |  |  |  |  |
| Orlie----- | 80 | Not limited |  | Not limited |  | Somewhat limited Gravel content | 0.01 |

Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \mid \text { unit } \end{gathered}\right.$ | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 119 : |  |  |  |  |  |  |  |
| Roques- | 45 | \| Not limited |  | Not limited |  | Not limited |  |
| Nusmag- | 35 | \| Not limited |  | Not limited |  | Not limited |  |
| 125: |  |  |  |  |  |  |  |
| Hogg | 55 | \| Not limited |  | Not limited |  | Not limited |  |
| Mara- | 30 | \| Not limited |  | Not limited |  | Not limited |  |
| 127 : |  |  |  |  |  |  |  |
| Rombo- | 45 | Somewhat limited Too clayey | 0.50 | Somewhat limited Too clayey | 0.50 | Very limited |  |
|  |  |  |  |  |  | Slope | 1.00 |
|  |  |  |  |  |  | Depth to bedrock | 0.03 |
| Wiggler--------- | 40 | Not limited |  | Not limited |  | Very limited |  |
|  |  |  |  |  |  | Droughty | 1.00 |
|  |  |  |  |  |  | Depth to bedrock | 1.00 |
|  |  |  |  |  |  | Slope | 1.00 |
|  |  |  |  |  |  | Gravel content | 0.88 |
| 129 : |  |  |  |  |  |  |  |
| Nusmag- | 45 | \| Not limited |  | Not limited |  | Not limited |  |
| Tottles-------- | 35 | Somewhat limited Depth to saturated zone | 0.44 | Somewhat limited Depth to saturated zone | 0.44 | Somewhat limited Depth to saturated zone | 0.75 |

Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 136: |  |  |  |  |  |  |  |
| Elpedro--- | 80 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | Not limited |  |
| 137: |  |  |  |  |  |  |  |
| Yata----------- | 50 | Very limited |  | \|Very limited |  | Very limited | 1.00 |
|  |  | Water erosion | 1.00 | Water erosion | 1.00 |  |  |
| Eody----------- | 40 | Very limited | 1.00 | Very limited | 1.00 | Very limited | 1.00 |
|  |  | Water erosion | 1.00 | Water erosion | 1.00 |  |  |
| 140: |  |  |  |  |  |  |  |
| Espiritu------- | 45 | Very limited |  | \|Very limited |  | Very limitedSlope |  |
|  |  | Slope | 1.00 | Slope | 1.00 |  | 1.00 |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Large stones content | 1.00 |
|  |  | Large stones content | 0.20 | Large stones content | 0.20 | Droughty | 0.04 |
|  |  |  |  |  |  | Gravel content | 0.01 |
| Wauquie--------- | 35 | Very limited Slope Dusty |  | Very limited Slope |  | Very limited |  |
|  |  |  | 1.00 |  | 1.00 | slope | 1.00 |
|  |  | Dusty | 0.50 | Dusty | 0.50 | Large stones content | 0.99 |
|  |  | Large stones content | 0.01 | Large stones content | 0.01 | Droughty | 0.71 |
|  |  |  |  |  |  | Gravel content | 0.55 |

Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | $\left.\begin{array}{\|c} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \mid \text { unit } \end{array} \right\rvert\,$ | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 141: <br> Capillo-- | 35 | Not limited |  | Not limited |  | Not limited |  |
| Carjo | 30 | Somewhat limited Large stones content | 0.08 | Somewhat limited Large stones content | 0.08 | Very limited <br> Large stones content <br> Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.35 \\ & 0.04 \end{aligned}\right.$ |
| Vamer----- | 30 | Somewhat limited Slope | 0.18 | Not limited |  | Very limited Depth to bedrock Slope Droughty Large stones content | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \\ & 0.51 \\ & 0.32 \end{aligned}\right.$ |
| $142 \text { : }$ <br> Pinavetes | 85 | Somewhat limited Too sandy | 0.84 | Somewhat limited Too sandy | 0.84 | Somewhat limited Droughty Slope | $\left\lvert\, \begin{aligned} & 0.92 \\ & 0.01 \end{aligned}\right.$ |
| $\begin{aligned} & 145: \\ & \text { Dermala } \end{aligned}$ | 50 | Very limited Slope Dusty | $\begin{array}{\|l} 1.00 \\ 0.50 \end{array}$ | ```Somewhat limited Slope Dusty``` | $\left\lvert\, \begin{aligned} & 0.78 \\ & 0.50 \end{aligned}\right.$ | Very limited Slope Gravel content Large stones content | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.93 \\ & 0.05 \end{aligned}\right.$ |

Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct } \\ \text { of } \\ \text { of } \\ \text { map } \end{gathered}\right.$ | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 180: |  |  |  |  |  |  |  |
| Oelop- | 90 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | Not limited |  |
| Oelop- | 90 | Not limited |  | Not limited |  | Not limited |  |
| 190: |  |  |  |  |  |  |  |
| Sedillo- | 90 | Somewhat limited Dusty | 0.50 | Somewhat limited Dusty | 0.50 | ```Somewhat limited Droughty Large stones content``` | $\left\lvert\, \begin{aligned} & 0.20 \\ & 0.01 \end{aligned}\right.$ |
| 200: |  |  |  |  |  |  |  |
| Katlon- | 85 | Not rated |  | Not rated |  | Not rated |  |
| 201: |  |  |  |  |  |  |  |
| Lobat- | 45 | Not rated |  | Not rated |  | Not rated |  |
| Abreu-- | 40 | Not rated |  | Not rated |  | Not rated |  |
| 203: |  |  |  |  |  |  |  |
| Nabor- | 55 | ```Very limited Water erosion Slope``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & \mid 0.50 \end{aligned}\right.$ | Very limited Water erosion | 11.00 | $\begin{aligned} & \text { \|Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
| Elbuck--- | 30 | Not limited |  | Not limited |  | Somewhat limited Gravel content Slope | $\left\lvert\, \begin{aligned} & 0.89 \\ & \mid 0.84 \end{aligned}\right.$ |

Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | Pct. of map unit | Paths and trails |  | $\begin{gathered} \text { Off-road } \\ \text { motorcycle trails } \end{gathered}$ |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 214: |  |  |  |  |  |  |  |
| Quimera--------- | 60 | $\begin{aligned} & \mid \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | Not limited |  | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
|  |  |  |  |  |  | Depth to bedrock | 1.00 |
|  |  |  |  |  |  | Gravel content | 1.00 |
|  |  |  |  |  |  | Droughty | 0.50 |
| Vamer----------- | 25 | Somewhat limitedSlope | 0.92 | Somewhat limited Large stones content | 10.05 | Very limited |  |
|  |  |  |  |  |  | Depth to bedrock | 1.00 |
|  |  | Large stones content | 0.05 |  |  | Large stones content | 1.00 |
|  |  |  |  |  |  | Slope | 1.00 |
|  |  |  |  |  |  | Droughty | 0.57 |
| 215: |  |  |  |  |  |  |  |
| Saragote-------- | 45 | Not rated |  | Not rated |  | Not rated |  |
| Ess------------- | 35 | Not limited |  | Not limited |  | Somewhat limited Large stones content Gravel content |  |
|  |  |  |  |  |  |  | 0.20 |
|  |  |  |  |  |  |  | 0.04 |

Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 216: |  |  |  |  |  |  |  |
| Angostura- | 85 | Very limited Slope | 1.00 | Somewhat limited Large stones content | 0.29 | Very limited <br> Slope | 1.00 |
|  |  | Large stones content | 0.29 | slope | 0.22 | Large stones content <br> Droughty | $1 \begin{aligned} & 1.00 \\ & 0.88\end{aligned}$ |
| 220 : |  |  |  |  |  |  |  |
| Rock outcrop- | 40 | Not rated |  | Not rated |  | Not rated |  |
| Vessilla-------- | 30 | Very limited Slope | 1.00 | Somewhat limited Slope | 0.22 | \|Very limited |  |
|  |  |  |  |  |  | Slope | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ |
|  |  |  |  |  |  | Depth to bedrock | 1.00 |
|  |  |  |  |  |  | Large stones content | 0.01 |
| Menefee--------- | 20 | Very limited Slope | 1.00 | Somewhat limited Slope | 0.22 | \|Very limited Slope | 1.00 |
|  |  |  |  |  |  | Depth to bedrock | 1.00 |
|  |  |  |  |  |  | Droughty | 0.99 |
| 228 : |  |  |  |  |  |  |  |
| Suposo--- | 50 | Not limited |  | Not limited |  | Not limited |  |
| Brycan- | 35 | Not limited |  | Not limited |  | Somewhat limited Flooding | 0.60 |

Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | Pct. | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | \|Value | Rating class and limiting features | \|Value |
| 230: |  | Not rated |  | Not rated |  | Not rated |  |
| Riverwash, gravelly- | 100 | ```Very limited Too sandy Depth to saturated zone Flooding``` | $\begin{aligned} & 1.00 \\ & 10.99 \end{aligned}$ | Very limitedToo sandy | 1.00 | Very limited |  |
|  |  |  |  |  |  | Flooding | 11.00 |
|  |  |  |  | Depth to saturated zone | 10.99 | Too sandy | 11.00 |
|  |  |  | 0.40 | Flooding | 10.40 | Droughty | 1.00 |
|  |  |  |  |  |  | Gravel content | 11.00 |
|  |  |  |  |  |  | Depth to saturated zone | 10.99 |
| 241: |  |  |  |  |  |  |  |
| Florita------------\| | 55 | $\begin{array}{\|c} \mid \text { very limited } \\ \text { Slope } \end{array}$ | 1.00 | Somewhat limited slope | 0.22 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Gravel content } \end{aligned}$ | 1.00 |
|  |  |  |  |  |  |  | 0.68 |
| Rock outcrop------- | 25 | Not rated |  | Not rated |  | Not rated |  |
| $242 \text { : }$ |  |  |  |  |  |  |  |
| Tinaja------------- | 50 | $\begin{aligned} & \text { \|Very limited } \\ & \text { Slope } \\ & \text { Susty } \end{aligned}$ | 1.00 | Very limited Slope | 11.00 | Very limited |  |
|  |  |  | 0.50 | Dusty | 10.50 | Large stones | 11.00 |
|  |  | Large stones content | 0.18 | Large stones content | 0.18 | Gravel content | 10.79 |
|  |  |  |  |  |  | Droughty | 10.20 |

Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $248 \text { : }$ <br> Hagerman | 45 | Not limited |  | Not limited |  | Somewhat limited Depth to bedrock Droughty | $\begin{array}{\|l} 0.90 \\ 0.02 \end{array}$ |
| Silver- | 40 | Not limited |  | Not limited |  | Not limited |  |
| 249: |  |  |  |  |  |  |  |
|  |  | Slope | 0.92 | Large stones content | 0.61 | Large stones content | 1.00 |
|  |  | Large stones content | 0.61 |  |  | Slope | 1.00 |
|  |  |  |  |  |  | Gravel content | 0.01 |
| 302: |  |  |  |  |  |  |  |
| Puye- | 85 | Not limited |  | Not limited |  | Very limited |  |
|  |  |  |  |  |  | Depth to cemented | 1.00 |
|  |  |  |  |  |  | Droughty | 1.00 |
|  |  |  |  |  |  | Gravel content | 0.30 |
|  |  |  |  |  |  | Slope | 0.04 |
|  |  |  |  |  |  | Large stones content | 0.01 |
| 401: |  |  |  |  |  |  |  |
| Chiminet- | 60 | Not rated |  | Not rated |  | Not rated |  |
| Rock outcrop---- | 25 | Not rated |  | Not rated |  | Not rated |  |

Table 9.--Paths, trails, and golf fairways--Continued


Table 9.--Paths, trails, and golf fairways--Continued

| Map symbol and soil name | Pct. of map unit | Paths and trails |  | Off-road motorcycle trails |  | Golf fairways |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| DAM: Dam- | 100 | Not rated |  | Not rated |  | Not rated |  |
| Water- | 100 | Not rated |  | Not rated |  | Not rated |  |

Table 10.--Dwellings and small commercial buildings
(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.)


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol <br> and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | 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 |
| $18:$ <br> Abiquiu | 50 | Very limited | 11.00 | Very limited |  | Very limited |  |
|  |  | Flooding |  | Flooding | 1.00 | Flooding | 1.00 |
|  |  | Large stones content | 0.28 | Depth to saturated zone <br> Large stones content | 0.95 0.28 | Large stones content | 0.28 |
| Peralta--------- | 40 | Very limited Flooding | 1.00 | ```Very limited Flooding Depth to saturated zone``` | $\begin{aligned} & 1.00 \\ & 0.99 \end{aligned}$ | Very limited Flooding | 1.00 |
|  |  |  |  |  |  |  |  |
| $20:$ |  |  |  |  |  |  |  |
| Menefee | 35 | Very limited Slope | 11.00 | Very limited | 1.00 | Very limited | 1.00 |
|  |  |  |  | Depth to soft |  | Depth to soft |  |
|  |  | Shrink-swell | 0.50 | Slope | 1.00 | Slope | 1.00 |
|  |  | Depth to soft bedrock | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| Vessilla-------- | 30 | ```Very limited Depth to hard bedrock Slope``` | 1.00 | Very limited Depth to hard bedrock | 1.00 | Very limited Depth to hard bedrock | 1.00 |
|  |  |  |  |  |  |  |  |
|  |  |  | 1.00 | slope | 1.00 | Slope | 1.00 |
| Rock outcrop---- | 15 | Not rated | Not rated |  | Not rated |  |  |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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: <br> Walrees | 45 | Very limited Flooding | 1.00 | ```Very limited Flooding Depth to saturated zone``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.82 \end{aligned}\right.$ | \|Very limited Flooding | 1.00 |
| Abiquiu- | 40 | Very limited Flooding | 11.00 | ```Very limited Flooding Depth to saturated zone``` | $\text { \| } 1.00$ | Very limited Flooding | 1.00 |
| $50:$ |  |  |  |  |  |  |  |
|  |  | Depth to hard bedrock | 1.00 | Depth to hard bedrock | 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Organic matter content <br> slope | $1 \begin{aligned} & 1.00 \\ & 0.16\end{aligned}$ | slope | 0.16 | slope | 1.00 1.00 |
|  |  | slope | 0.16 |  |  | Organic matter content | 1.00 |
| Kunz--- | 40 | 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 |
| 54 : |  |  |  |  |  |  |  |
| Capillo------- | 90 | Very limited Shrink-swell | 1.00 | Very limited Shrink-swell | 1.00 | \|Very limited Shrink-swell | 1.00 |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | 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 |
| 69 : |  |  |  |  |  |  |  |
| Lindrith- | 50 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.12 |
| Royosa-- | 35 | Not limited |  | Not limited |  | Somewhat limited Slope | 0.12 |
| 70 : |  |  |  |  |  |  |  |
| Sparham- | 80 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
|  |  | Shrink-swell | 1.00 | Shrink-swell | 1.00 | Shrink-swell | 1.00 |
| 80: |  |  |  |  |  |  |  |
| Orlie----------- | 45 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited Shrink-swell | 0.50 | $\begin{aligned} & \text { Somewhat limited } \\ & \text { Shrink-swell } \\ & \text { Slope } \end{aligned}$ | 0.50 |
|  |  |  |  |  |  |  | 0.12 |
| Nalivag--------- | 35 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited Shrink-swell Slope | 0.50 |
|  |  |  |  |  |  |  |  |
| 102 : |  |  |  |  |  |  |  |
| Menefee-------- | 40 | Very limited Slope | 1.00 | \|Very limited | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
|  |  |  |  | Depth to soft bedrock |  |  |  |
|  |  | Shrink-swell | 0.50 | slope | 1.00 | Depth to soft bedrock | 1.00 |
|  |  | Depth to soft bedrock | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |

Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | $\begin{array}{\|c} \mid \text { Pct. } \\ \text { of } \\ \text { omap } \\ \text { unit } \end{array}$ | 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 |
| $102 \text { : }$ |  |  |  |  |  |  |  |
|  |  | Slope | 0.63 | Slope | 0.63 | Slope | 1.00 |
|  |  | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| 103: |  |  |  |  |  |  |  |
|  | 80 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited Shrink-swell | 0.50 |
|  |  |  |  |  |  | Slope | 0.12 |
| 106: |  |  |  |  |  |  |  |
| Amal | 85 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited Shrink-swell |  | Somewhat limited |  |
|  |  |  |  |  | 0.50 | Shrink-swell | 0.50 |
| 107: |  |  |  |  |  |  |  |
| Berryman-------- | 55 | Somewhat limited Shrink-swell | 0.50 | \|Somewhat limited Shrink-swell | 0.50 | $\begin{array}{\|l} \text { Somewhat limited } \\ \text { Slope } \\ \text { Shrink-swell } \end{array}$ |  |
|  |  |  |  |  |  |  | 0.50 |
|  |  |  |  |  |  |  | 0.50 |
| Ruson | 30 | Very limited Shrink-swell | 1.00 | \|Very limited Shrink-swell | 1.00 | Very limited | 1.00 |
| 108: |  |  |  |  |  |  |  |
| Peney----------- | 50 | Very limited Depth to hard |  | Very limitedDepth to hard |  | Very limited |  |
|  |  |  | 1.00 |  | 1.00 | Depth to hard | 1.00 |
|  |  | slope | 0.63 | Slope | 0.63 | Slope | 1.00 |
|  |  | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 |
| 118 : |  |  |  |  |  |  |  |
| Hesperus-- | 35 | Not limited |  | Not limited |  | Not limited |  |
| Pastorius- | 25 | Somewhat limited Large stones content | 0.18 | Somewhat limited Large stones content | 0.18 | Somewhat limited Large stones content | 0.18 |
| Chamita--------- | 20 | ```Very limited Flooding Depth to saturated zone Shrink-swell``` |  | Very limited |  | Very limited |  |
|  |  |  | 1.00 | Flooding | 1.00 | Flooding | 1.00 |
|  |  |  | 0.98 | Depth to | 1.00 | Depth to | 0.98 |
|  |  |  | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| 119 : |  |  |  |  |  |  |  |
| Roques---------- | 45 | Very limited Shrink-swell | 1.00 | Very limited Shrink-swell | 1.00 | ```Very limited Shrink-swell Slope``` | 1.00 |
|  |  |  |  |  |  |  | 0.12 |
| Nusmag---------- | 35 | \|Very limited Shrink-swell | 1.00 | ```Very limited Shrink-swell Depth to saturated zone``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.24 \end{aligned}\right.$ | Very limited Shrink-swell | 1.00 |
|  |  |  |  |  |  |  |  |
| 125 : |  |  |  |  |  |  |  |
| Hogg------------ | 55 | Very limited Shrink-swell | 1.00 | Very limited Shrink-swell | 1.00 | Very limited Shrink-swell Slope |  |
|  |  |  |  |  |  |  |  |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 |
| $140:$ |  |  |  |  |  |  |  |
| Espiritu-------- | 45 | Slope | 1.00 | \| Slope | 1.00 | slope | 1.00 |
|  |  | Large stones content | 0.28 | Large stones content | 0.28 | Large stones content | 0.28 |
| Wauquie--------- | 35 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Large stones content | 0.37 | Large stones content | 0.37 | Large stones content | 0.37 |
| 141: |  |  |  |  |  |  |  |
| Capillo--------- | 35 | Very limited Shrink-swell | 1.00 | Very limited Shrink-swell | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Shrink-swell } \\ & \text { Slope } \end{aligned}$ |  |
|  |  |  |  |  |  |  | 1.00 |
|  |  |  |  |  |  |  | 0.88 |
| Carjo----------- | 30 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Shrink-swell | 11.00 | Shrink-swell | 1.00 | Shrink-swell | 1.00 |
|  |  | Depth to hard bedrock | 0.35 | Depth to hard bedrock | 1.00 | slope | 1.00 |
|  |  | slope | 0.04 | slope | 0.04 | Depth to hard bedrock | 0.35 |
| Vamer------------ | 30 | ```Very limited Depth to hard bedrock Slope``` |  | Very limited |  | Very limited |  |
|  |  |  | 11.00 | Depth to hard bedrock | 1.00 | Slope | 1.00 |
|  |  |  | 1.00 | Slope | 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |

Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 |
| 142: <br> Pinavetes | 85 | Somewhat limited Slope | 0.01 | Somewhat limited Slope | 0.01 | \|Very limited slope | 1.00 |
| Dermala- | 50 | Very limited Slope | 1.00 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Shrink-swell } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & \mid 0.50 \end{aligned}\right.$ | Very limited Slope | 1.00 |
| Rosced-- | 35 | Very limited Slope | 1.00 | Very limited Slope | 1.00 | Very limited Slope | 1.00 |
| $\begin{aligned} & 146 \text { : } \\ & \text { Parida--- } \end{aligned}$ | 45 | Very limited Slope | 1.00 | Very limited Slope | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
| Palacid------- | 40 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Shrink-swell } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Shrink-swell } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Shrink-swell } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ |
| $\begin{aligned} & 147 \text { : } \\ & \text { Dermala--- } \end{aligned}$ | 45 | Very limited Slope | 1.00 | Very limited Slope | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
| Chimayo--- | 40 | ```Very limited Slope Depth to hard bedrock``` | $\begin{array}{\|l} 1.00 \\ 1.00 \end{array}$ | ```Very limited Slope Depth to hard bedrock``` | $\text { \| } 1.00$ | ```\|Very limited ``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 |
| 190: |  |  |  |  |  |  |  |
| Sedillo- | 90 | Somewhat limited Large stones content | 0.59 | Somewhat limited Large stones content | 0.59 | Somewhat limited Large stones content | 0.59 |
|  |  | Shrink-swell | 0.50 |  |  | Shrink-swell | 0.50 |
| Katlon---------- | 85 | Very limited Slope | 1.00 | Very limited | 1.00 | Very limited | 1.00 |
|  |  |  |  | Slope |  | Slope |  |
|  |  |  |  | Shrink-swell | 0.50 |  |  |
| 201: |  |  |  |  |  |  |  |
| Lobat----------- | 45 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Shrink-swell } \end{array}$ | 1.00 | \|Very limited | 1.00 | \|Very limited |  |
|  |  |  |  |  |  | slope | 1.00 |
|  |  |  | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| Abreu----------- | 40 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Shrink-swell } \end{array}$ | 1.000.50 | Very limitedSlope | 1.00 | Very limited | 1.00 |
|  |  |  |  |  |  | slope |  |
|  |  |  |  | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
|  |  |  |  | Depth to hard bedrock | 0.01 |  |  |
| 203: |  |  |  |  |  |  |  |
| Nabor | 55 | Very limited Shrink-swell Slope |  | Very limited |  | Very limited |  |
|  |  |  | 11.00 | Shrink-swell | 1.00 | Shrink-swell | 1.00 |
|  |  |  | 1.00 | slope | 1.00 | slope | 1.00 |
| Elbuck---------- | 30 | Somewhat limited Slope | 0.84 | Somewhat limited slope | 0.84 | Very limited Slope | 1.00 |

Table 10.--Dwellings and small commercial buildings--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 |
| 206: |  |  |  |  |  |  |  |
| Angostura------- | 60 | \|Very limited | |  | Very limited |  | Very limited |  |
|  |  |  |  | Large stones content | 1.00 | \| slope | 1.00 |
|  |  | Large stones content | $\left\lvert\, \begin{aligned} & 1.00 \\ & 10.30 \end{aligned}\right.$ |  | 0.30 | Large stones content | 0.30 |
| Gromes---------- | 25 | 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 |
|  |  | Large stones content | 0.19 | Large stones content | 0.19 | Large stones content | 0.19 |
| 207: |  |  |  |  |  |  |  |
| Gromes---------- | 65 | 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 |
|  |  | Large stones content | 0.14 | Large stones content | 0.14 | Large stones content | 0.14 |
| Rock outcrop- | 20 | Not rated |  | Not rated |  | Not rated |  |
| 208: |  |  |  |  |  |  |  |
| Ess------------- | 45 | Somewhat limited |  | Somewhat limited |  | Very limited |  |
|  |  | Slope | 0.04 | Slope | 0.04 | Shrink-swell | 0.50 |
|  |  | Large stones content | 0.02 | Large stones content | 0.02 | Large stones content | 0.02 |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | 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 |
| 210: |  |  |  |  |  |  |  |
| Bracos---------- | 30 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | slope | 1.00 | Slope | 1.00 |
|  |  | Large stones content | 1.00 | Depth to hard bedrock | 1.00 | Large stones content | 1.00 |
|  |  | Depth to hard bedrock | 0.29 | Large stones content | 1.00 | Depth to hard bedrock | 0.29 |
| 211: |  |  |  |  |  |  |  |
| Angostura------- | 90 | Very limited 1.00 |  | Very limited |  | Very limited |  |
|  |  |  |  | Slope | 1.00 | slope | 1.00 |
|  |  | Large stones content | 0.26 | Large stones content | 0.26 | Large stones content | 0.26 |
| 214: |  |  |  |  |  |  |  |
| Quimera--------- | 60 | 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 |
|  |  | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| Vamer------------ | 25 | Very limited Depth to hard bedrock Slope |  | Very limited |  | Very limited |  |
|  |  |  | 1.00 | Depth to hard bedrock | 1.00 | slope | 1.00 |
|  |  |  | 1.00 | slope | 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Shrink-swell | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued

| Map symbol and soil name | $\begin{array}{\|c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}$ | 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 |
|  |  |  |  |  |  |  |  |
| Menefee------------ | 20 | \|Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Shrink-swell | 0.50 | Depth to soft | 1.00 | Depth to soft | 1.00 |
|  |  |  |  | bedrock |  | bedrock |  |
|  |  | Depth to soft bedrock | 0.50 | Shrink-swell | 0.50 | Shrink-swell | 0.50 |
| 228: |  |  |  |  |  |  |  |
| Suposo------------- \| | 50 | \|Very limited Shrink-swell | 1.00 | Very limited Shrink-swell | 1.00 | Very limited Shrink-swell | 1.00 |
| Brycan------------- | 35 | Very limited Flooding | 1.00 | \|Very limited Flooding | 1.00 | Very limited Flooding | 1.00 |
| 230: |  |  |  |  |  |  |  |
| Badland------------ \| | 90 | Not rated |  | Not rated |  | Not rated |  |
| 240: |  |  |  |  |  |  |  |
| Riverwash, gravelly-\| | 100 | \|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 |
| 241: |  |  |  |  |  |  |  |
| Florita------------ | 55 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
| Rock outcrop-------- | 25 | Not rated |  | Not rated |  | Not rated |  |

Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--Continued


Table 10.--Dwellings and small commercial buildings--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 |
| 710: |  |  |  |  |  |  |  |
| Calaveras------- | 50 | Very limited |  | Very limited | 1.00 | Very limited |  |
|  |  | Large stones content | 0.99 | Large stones content | 0.99 | Large stones content | 0.99 |
| Palon----- | 30 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Large stones content | 0.01 | Large stones content | 0.01 | Large stones content | 0.01 |
| 711: |  |  |  |  |  |  |  |
| Laventana------- | 80 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Large stones content | 0.99 | Large stones content | 0.99 | Large stones content | 0.99 |
| 719 : |  |  |  |  |  |  |  |
| Alanos---------- | 80 | ```Very limited Slope Shrink-swell``` |  | Very limited | 1.00 | Very limited |  |
|  |  |  | 1.00 | slope |  | slope | 1.00 |
|  |  |  | 1.00 | Large stones content | 0.65 | Shrink-swell | 1.00 |
|  |  | Large stones content | 0.65 |  |  | Large stones content | 0.65 |
| 802 : |  |  |  |  |  |  |  |
| Redondo- | 85 | Very limited Slope | 1.00 | Very limited Slope | 1.00 | Very limited Slope | 1.00 |

Table 10.--Dwellings and small commercial buildings--Continued

(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.)


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | Pct <br> of map unit | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 40: |  |  |  |  |  |  |  |
| Pinitos-- | 40 | Somewhat limited <br> Shrink-swell <br> Frost action <br> Low strength | $\left\lvert\, \begin{aligned} & 0.50 \\ & 0.50 \\ & 0.22 \end{aligned}\right.$ | Somewhat limited Cutbanks cave | 0.10 | Not limited |  |
| Menefee-------- | 20 | Somewhat limited |  | Very limited Depth to soft bedrock | 1.00 | Very limited Depth to bedrock | 1.00 |
|  |  | Slope | 0.84 | slope | 0.84 | Droughty | 0.99 |
|  |  | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | Slope | 0.84 |
|  |  | Frost action |  |  |  |  |  |
| Vessilla-------- | 20 | ```\|ery limited Depth to hard bedrock slope``` | 1.00 | Very limited Depth to hard bedrock | 1.00 | Very limited Droughty | 1.00 |
|  |  |  | 0.84 | slope | 0.84 | Depth to bedrock | 1.00 |
|  |  |  |  | Cutbanks cave | 0.10 | Slope | 0.84 |
|  |  |  |  |  |  | Large stones content | 0.01 |
| 42: |  |  |  |  |  |  |  |
| Walrees--------- | 45 | \|Very limited Flooding | 11.00 | ```Very limited Cutbanks cave Depth to saturated zone Flooding``` | 1.00 | ```Somewhat limited Flooding Salinity``` | 0.60 |
|  |  |  |  |  | 1.00 |  |  |
|  |  |  |  |  | 0.82 0.60 |  | 0.13 |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | \|Value | Rating class and limiting features | Value |
| 42: |  |  |  |  |  |  |  |
| Abiquiu--------- | 40 | Very limited Flooding | 1.00 | Very limited | 11.00 | Somewhat limited | 0.95 |
|  |  |  |  | Depth to saturated zone Flooding | $\left\lvert\, \begin{aligned} & 0.95 \\ & 0.60\end{aligned}\right.$ | Flooding | 0.60 |
| 50: |  |  |  |  |  |  |  |
| Stout | 45 | Very limited |  | Very limited |  | Not rated |  |
|  |  | Depth to hard bedrock | 1.00 | Depth to hard bedrock | 11.00 |  |  |
|  |  | slope | 0.16 | slope | 0.16 |  |  |
| Kunz------------- | 40 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited | 0.16 | Somewhat limited Slope | 0.16 |
|  |  | Frost action | 0.50 | Cutbanks cave | 0.10 |  |  |
|  |  | Slope | 0.16 |  |  |  |  |
| 54 : |  |  |  |  |  |  |  |
| Capill | 90 | Very limited Low strength Shrink-swell |  | Somewhat limited Cutbanks cave | 0.10 | Not limited |  |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 1.00 |  |  |  |  |
| 60: |  |  |  |  |  |  |  |
| Sparham--------- | 85 | Very limited Low strength |  | Somewhat limited |  | Not limited |  |
|  |  |  | 1.00 | Depth to saturated zone | 0.35 |  |  |
|  |  | Shrink-swell | 1.00 | Too clayey | 0.12 |  |  |
|  |  | Flooding | 0.40 | Cutbanks cave | 0.10 |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { mapit } \end{gathered}\right.$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 69 : |  |  |  |  |  |  |  |
| Lindrith- | 50 | Somewhat limited Frost action | 0.50 | Very limited Cutbanks cave | 1.00 | Not limited |  |
| Royosa- | 35 | Not limited |  | Very limited Cutbanks cave | 1.00 | Somewhat limited Droughty | 0.69 |
| 70: |  |  |  |  |  |  |  |
| Sparham--------- | 80 | Very limited |  | Somewhat limited Too clayey | 0.28 | Very limited |  |
|  |  | Shrink-swell | 1.00 |  |  | Salinity | 1.00 |
|  |  | Low strength | 1.00 | Cutbanks cave | 0.10 | Sodium content | 1.00 |
|  |  | Flooding | 0.40 |  |  | Droughty | 0.09 |
| 80: |  |  |  |  |  |  |  |
| Orlie | 45 | Very limited Low strength | 11.00 | Somewhat limited Cutbanks cave | 0.10 | Somewhat limited Gravel content | 0.01 |
|  |  |  |  |  |  |  |  |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
| Nalivag--------- | 35 | Very limited |  | Somewhat limited | 0.10 | Not limited |  |
|  |  | Low strength | 1.00 | Cutbanks cave |  |  |  |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
|  |  |  |  |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | \|Value | Rating class and limiting features | Value |
| 102 : |  |  |  |  |  |  |  |
| Menefee--------- | 40 | Very limited Depth to soft bedrock | 1.00 | Very limited Depth to soft bedrock | 1.00 | Very limited Depth to bedrock | 1.00 |
|  |  | Low strength | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Slope | 1.00 | Cutbanks cave | 0.10 | Droughty | 0.63 |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
| Nalivag--------- | 40 | Very limited |  | Somewhat limited |  | Somewhat limited |  |
|  |  | Low strength | 1.00 | Slope | 0.63 | slope | 0.63 |
|  |  | Slope | 0.63 | Cutbanks cave | 0.10 |  |  |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
| $103:$ |  |  |  |  |  |  |  |
| Orlie----------- | 80 | Somewhat limited Shrink-swell | 0.50 | Somewhat limited Cutbanks cave | 0.10 | Somewhat limited Gravel content | 0.01 |
|  |  | Frost action | 0.50 |  |  |  |  |
| 106: |  |  |  |  |  |  |  |
| Amal------------ | 85 |  |  | Somewhat limited Cutbanks cave | 0.10 | Not limited |  |
|  |  | Low strength | 1.00 |  |  |  |  |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
|  |  |  |  |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $107 \text { : }$ |  |  |  |  |  |  |  |
| Berryman | 55 | Low strength | 1.00 | Somewhat limited Cutbanks cave | 0.10 | Very limited Carbonate content | 1.00 |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
| Ruson----------- | 30 | \|Very limited Low strength Shrink-swell |  | Somewhat limitedToo clayey | 0.12 | Somewhat limited Gravel content | 0.01 |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 1.00 | Cutbanks cave | 0.10 |  |  |
| 108: |  |  |  |  |  |  |  |
| Peney | 50 | Very limited |  | Very limited | 1.00 | Very limited | 1.00 |
|  |  | Depth to hard bedrock | 11.00 | Depth to hard bedrock |  | Droughty |  |
|  |  | Slope | 0.63 | Slope | 0.63 | Depth to bedrock | 1.00 |
|  |  | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | Gravel content | 0.92 |
|  |  | Frost action | 0.50 |  |  | Slope | 0.63 |
| Ransect- | 35 | Very limited Low strength |  | Very limited Depth to hard bedrock Cutbanks cave | 1.00 | Very limited Carbonate content | 1.00 |
|  |  |  | 1.00 |  |  |  |  |
|  |  | Shrink-swell | 0.50 |  | 0.10 | Depth to bedrock | 0.01 |
|  |  | Frost action | 0.50 |  |  |  |  |
|  |  | Depth to hard bedrock | 0.01 |  |  |  |  |
|  |  |  |  |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { mapit } \end{gathered}\right.$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $109 \text { : }$ |  |  |  |  |  |  |  |
| Calendar-------- | 85 | Very limited |  | Slope | 1.00 | Slope | 1.00 |
|  |  | Shrink-swell | 1.00 | Cutbanks cave | 0.10 | Gravel content | 0.95 |
|  |  | Slope | 1.00 | Depth to soft bedrock | 0.10 0.03 | Depth to bedrock | 0.10 |
| $110 \text { : }$ |  |  |  |  |  |  |  |
| Vessilla- | 45 | ```Depth to hard bedrock``` | 1.00 | Depth to hard bedrock | 1.00 | Depth to bedrock | 1.00 |
|  |  | Slope | \| 1.00 | Slope <br> Cutbanks cave | 1.00 | Slope | 1.00 |
|  |  |  |  |  | 0.10 | Large stones content | 0.99 |
|  |  |  |  |  |  |  | 0.01 |
| Menefee--------- | 25 |  |  | Very limited |  | Very limited Depth to bedrock |  |
|  |  | Depth to soft bedrock | 1.00 | Depth to soft bedrock | 1.00 |  | 1.00 |
|  |  | Slope | 1.00 | slope | 1.00 | Slope | 1.000.99 |
|  |  | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | Droughty |  |
|  |  | Frost action | 0.50 |  |  |  | 0.99 |
| Orlie----------- | 20 | Very limited Low strength Shrink-swell Frost action |  | Somewhat limited Cutbanks cave | 0.10 | Somewhat limited Gravel content | 0.01 |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 0.50 |  |  |  |  |
|  |  |  | 0.50 |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 117: |  |  |  |  |  |  |  |
| Chamita--------- | 85 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Frost action | 1.00 | Depth to saturated zone | 1.00 | Flooding | 1.00 |
|  |  | Flooding | 1.00 | Cutbanks cave | 1.00 | Depth to saturated zone | 0.75 |
|  |  | Low strength | 1.00 | Flooding | 0.80 |  |  |
|  |  | Depth to saturated zone Shrink-swell | 0.75 0.50 |  |  |  |  |
| 118 : |  |  |  |  |  |  |  |
| Hesperus-------- | 35 | Very limited |  | Somewhat limited |  | Not limited |  |
|  |  | Low strength | 1.00 | Cutbanks cave | 0.10 |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
| Pastorius------- | 25 | Somewhat limited Frost action |  | Somewhat limited |  | Somewhat limited Large stones content | 0.11 |
|  |  |  | 0.50 | Large stones content | 0.18 |  |  |
|  |  | Large stones content | 0.18 | Cutbanks cave | 0.10 |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol <br> and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 125 : |  |  |  |  |  |  |  |
|  |  | Low strength | 1.00 | Cutbanks cave | 0.10 |  |  |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
| 127: |  |  |  |  |  |  |  |
| Rombo | 45 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Low strength | 1.00 | Slope | 1.00 | Too clayey | 1.00 |
|  |  | Shrink-swell | 1.00 | Too clayey | 0.12 | Slope | 1.00 |
|  |  | Slope | 1.00 | Cutbanks cave | 0.10 | Depth to bedrock | 0.03 |
|  |  | Frost action | 0.50 | Depth to soft bedrock | 0.03 |  |  |
| Wiggler--------- | 40 |  |  | Very limited |  | Very limited Droughty | 1.00 |
|  |  | Depth to soft bedrock | 1.00 | Depth to soft bedrock | 1.00 |  |  |
|  |  | slope | 1.00 | slope | 1.00 | Depth to bedrock | 1.00 |
|  |  | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | Slope | 1.00 |
|  |  | Frost action | 0.50 |  |  | Gravel content | 0.88 |
| 129 : |  |  |  |  |  |  |  |
| Nusmag---------- | 45 | Very limited Low strength Shrink-swell |  | Somewhat limited |  | Not limited |  |
|  |  |  | 1.00 | Too clayey | 0.28 |  |  |
|  |  |  | 1.00 | Depth to saturated zone Cutbanks cave | 0.24 0.10 |  |  |
|  |  |  |  |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 129: |  |  |  |  |  |  |  |
| Tottles--------- | 35 | Very limited Frost action | 1.00 |  |  | Somewhat limited Depth to saturated zone | 0.75 |
|  |  |  |  | Depth to saturated zone | 1.00 |  |  |
|  |  | Low strength | 1.00 | Too clayey | 0.28 |  |  |
|  |  | Shrink-swell | 1.00 | Cutbanks cave | 0.10 |  |  |
|  |  | Depth to saturated zone | 0.75 |  |  |  |  |
| 130: |  |  |  |  |  |  |  |
| Topetaul-------- | 45 | Very limited Shrink-swell | 11.00 | Very limited Cutbanks cave | 1.00 | Very limited | 1.00 |
|  |  |  |  |  |  | Large stones content |  |
|  |  | Slope | 0.96 | Slope | 0.96 | Slope | 0.96 |
|  |  | Low strength | 0.78 | Large stones content | 0.31 | Droughty | 0.29 |
|  |  | Large stones content | 0.31 | Too clayey | 0.03 |  |  |
| Hogg | 35 | ```\| Very limited Shrink-swell Low strength Slope``` |  | Very limited Cutbanks cave slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.96 \end{aligned}\right.$ | Somewhat limited Slope | 0.96 |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 0.96 |  |  |  |  |
|  |  |  |  |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 140: |  |  |  |  |  |  |  |
| Wauquie--------- | 35 | \|Very limited |  | Very limited |  | Very limited |  |
|  |  | slope | 1.00 | Slope | 1.00 | \| Slope | 1.00 |
|  |  | Frost action | 0.50 | Large stones content | 0.37 | Large stones content | 0.99 |
|  |  | Large stones | 0.37 | Cutbanks cave | 0.10 | Droughty | 0.71 |
|  |  | content |  |  |  | Gravel content | 0.55 |
| 141: |  |  |  |  |  |  |  |
| Capillo--------- | 35 | Very limited |  | Somewhat limited |  | Not limited |  |
|  |  | Low strength |  | Cutbanks cave | 0.10 |  |  |
|  |  | Shrink-swell | $1.00$ |  |  |  |  |
| Carjo----------- | 30 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Low strength | 1.00 | Depth to hard bedrock | 1.00 | Large stones content | 1.00 |
|  |  | Shrink-swell | 1.00 | Cutbanks cave | 0.10 | Depth to bedrock | 0.35 |
|  |  | Frost action | $0.50$ | Slope | $0.04$ | Slope | 0.04 |
|  |  | Depth to hard bedrock | 0.35 | Too clayey |  |  |  |
|  |  | slope | 0.04 |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 141: |  |  |  |  |  |  |  |
| Vamer | 30 | Depth to hard bedrock | 1.00 | Depth to hard bedrock | 1.00 | Depth to bedrock | 1.00 |
|  |  | Low strength | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Slope | 1.00 | Cutbanks cave | 0.10 | Droughty | 0.51 |
|  |  | Shrink-swell | 0.50 |  |  | Large stones content | 0.32 |
|  |  | Frost action | 0.50 |  |  |  |  |
| 142: |  |  |  |  |  |  |  |
| Pinavetes------- | 85 | Somewhat limitedSlope |  | Very limited |  | Somewhat limited |  |
|  |  |  | 0.01 | Cutbanks cave | 1.00 | Droughty | 0.92 |
|  |  |  |  | Slope | 0.01 | Slope | 0.01 |
| 145: |  |  |  |  |  |  |  |
| Dermala--------- | 50 | Very limited <br> Slope |  | Very limited |  | Very limited |  |
|  |  |  |  | 1.00 | Slope | 1.00 |
|  |  | Frost action | 0.50 |  | Cutbanks cave | 1.00 | Gravel content | 0.93 |
|  |  |  |  |  |  | Large stones content | 0.05 |
| Rosced---------- | 35 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Frost action } \end{aligned}$ |  | ```Very limited Slope Cutbanks cave``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | Very limited Slope |  |
|  |  |  | 1.00 |  |  |  | 1.00 |
|  |  |  | 0.50 |  |  | Gravel content | 1.00 |
|  |  |  |  |  |  | Droughty | 0.93 |
|  |  |  |  |  |  | Large stones content | 0.03 |
|  |  |  |  |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 146: |  |  |  |  |  |  |  |
| Parida---------- | 45 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 11.00 | Very limited Cutbanks cave Slope | 1.00 | Very limited |  |
|  |  |  |  |  |  | Slope | 1.00 |
|  |  |  |  |  | 1.00 | Gravel content | 0.99 |
|  |  |  |  |  |  | Droughty | 0.14 |
|  |  |  |  |  |  | Large stones content | 0.03 |
| Palacid--------- | 40 | \|Very limited | |  | Very limited Cutbanks cave | 1.00 | Very limited |  |
|  |  | Slope | 1.00 |  |  | Slope | 1.00 |
|  |  | Low strength | 1.00 | Slope | 1.00 | Gravel content | 0.99 |
|  |  | Shrink-swell | 0.50 |  |  | Large stones content | 0.03 |
| 147: |  |  |  |  |  |  |  |
| Dermala--------- | 45 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Frost action | 0.50 | Cutbanks cave | 1.00 | Gravel content | 0.93 |
|  |  |  |  |  |  | Large stones content | 0.05 |
| Chimayo--------- | 40 | Very limited Depth to hard bedrock slope | 1.00 | Very limited | 1.00 | Very limitedSlope | 1.00 |
|  |  |  |  | Depth to hard bedrock |  |  |  |
|  |  |  | 1.00 | Slope Cutbanks cave | 1.00 | Droughty | 1.00 |
|  |  |  |  |  | 0.10 | Depth to bedrock | 1.00 |
|  |  |  |  |  |  | Gravel content | 1.00 |
|  |  |  |  |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 201: |  |  |  |  |  |  |  |
|  |  | Slope | 1.00 | Slope | 1.00 |  |  |
|  |  | Shrink-swell | 0.50 | Cutbanks cave | 1.00 |  |  |
|  |  | Frost action | 0.50 | Depth to hard bedrock | 0.01 |  |  |
| 203: |  |  |  |  |  |  |  |
| Nabor----------- | 55 | Very limited |  | Very limited |  | Very limited | 1.00 |
|  |  | Low strength | 1.00 | Slope | 1.00 | slope |  |
|  |  | Shrink-swell | 1.00 | Too clayey | 0.12 |  |  |
|  |  | Slope | 1.00 | Cutbanks cave | 0.10 |  |  |
|  |  | Frost action | 0.50 |  |  |  |  |
| Elbuck---------- | 30 | Somewhat limited | 0.84 | Very limited | 1.00 | Somewhat limited Gravel content | 0.89 |
|  |  | Frost action | 0.50 | slope | 0.84 | Slope | 0.84 |
| 206: |  |  |  |  |  |  |  |
| Angostura------- | 60 | Very limited |  | Very limited |  | Very limited |  |
|  |  | slope |  | Slope |  | Slope |  |
|  |  | Frost action | 0.50 | Large stones content | $0.30$ | Large stones content | 0.79 |
|  |  | Large stones content | 0.30 | Cutbanks cave | 0.10 |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | Pct. of map unit | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 211: |  |  |  |  |  |  |  |
| Angostura | 90 | Slope | 1.00 | Slope | 1.00 | Slope | 1.00 |
|  |  | Frost action | 0.50 | Large stones content | 10.26 | Large stones content | 0.79 |
|  |  | Large stones content | 0.26 | Cutbanks cave | 0.10 | Gravel content Droughty | $\begin{array}{\|l\|} 0.49 \\ 0.28 \end{array}$ |
| 214 : |  |  |  |  |  |  |  |
| Quimera--------- | 60 | Very limited |  | Very limited |  | Very limited |  |
|  |  | Depth to hard bedrock | 1.00 | Depth to hard bedrock | 1.00 | slope | 1.00 |
|  |  | Slope | 1.00 | Slope | 1.00 | Depth to bedrock | 1.00 |
|  |  | Low strength | 1.00 | Cutbanks cave | 0.10 | Gravel content | 1.00 |
|  |  | Shrink-swell | 0.50 |  |  | Droughty | 0.50 |
| Vamer----------- | 25 | \|Very limited |  | Very limited |  | Very limited |  |
|  |  | Depth to hard bedrock | 1.00 | Depth to hard bedrock | 1.00 | Depth to bedrock | 1.00 |
|  |  | Low strength | 1.00 | Slope | 1.00 | Large stones content | 1.00 |
|  |  | Slope | 1.00 | Cutbanks cave | 0.10 | slope | 1.00 |
|  |  | Shrink-swell | 10.50 |  |  | Droughty | 0.57 |
|  |  | Frost action | 0.50 |  |  |  |  |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Local roads and streets |  | Shallow excavations |  | Lawns and landscaping |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 247: |  |  |  |  |  |  |  |
| Wenota---------- | 85 | Very limited |  | Somewhat limited |  | Somewhat limited Flooding | 0.60 |
|  |  | Flooding | 1.00 | Flooding | 0.60 |  |  |
|  |  | Low strength | 1.00 | Cutbanks cave | 0.10 |  |  |
|  |  | Shrink-swell | 0.50 |  |  |  |  |
| 248: |  |  |  |  |  |  |  |
| Hagerman-------- | 45 | Somewhat limited |  | Very limited |  | Somewhat limited Depth to bedrock |  |
|  |  | Depth to hard bedrock | 0.90 | Depth to hard bedrock | 1.00 |  | 0.90 |
|  |  | Shrink-swell | 0.50 | Cutbanks cave | 0.10 | Droughty | 0.02 |
| Silver---------- | 40 | \|Very limited Low strength Shrink-swell |  | Somewhat limited Cutbanks cave | 0.10 | Not limited |  |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 1.00 |  |  |  |  |
| 249 : |  |  |  |  |  |  |  |
| Losmarios------- | 85 | \|Very limited Low strength |  | Very limited |  | Very limited | 1.00 |
|  |  |  | 1.00 | Slope | 1.00 | Large stones content |  |
|  |  | Shrink-swell | 1.00 | Too clayey | 0.72 | Slope | 1.00 |
|  |  | slope | 1.00 | Cutbanks cave | 0.10 | Gravel content | 0.01 |

Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 11.--Roads and streets, shallow excavations, and lawns and landscaping--Continued


Table 12.--Sewage disposal
(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.)


Table 12.--Sewage disposal--Continued


Table 12.--Sewage disposal--Continued

| Map symbol and soil name | $\begin{array}{\|c} \text { Pct. } \\ \text { of } \\ \mid \text { map } \\ \mid \text { unit } \end{array}$ | Septic tank absorption fields |  | Sewage lagoons |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 39: |  |  |  |  |  |
| Fruitland- | 85 | Not limited |  | $\begin{array}{\|l} \text { Very limited } \\ \text { Seepage } \\ \text { Slope } \end{array}$ | $\text { \| } 1.00$ |
| 40: |  |  |  |  |  |
| Pinitos--------- | 40 | Somewhat limited Slow water movement | 0.46 | Very limited Seepage Slope | $\text { \| } 1.00$ |
| Menefee-------- | 20 | Very limited Depth to bedrock | 1.00 | ```\|Very limited Depth to soft bedrock``` | 1.00 |
|  |  | Slope | 0.84 | Slope | 1.00 |
| Vessilla-------- | 20 | Very limited Depth to bedrock |  | Very limited |  |
|  |  |  | 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Seepage, bottom layer <br> Slope | 1.00 0.84 | Slope Seepage | 1.00 0.27 |
| 42 : |  |  |  |  |  |
| Walrees--------- | 45 | 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 | 0.99 |
|  |  | Seepage, bottom layer | 1.00 |  |  |
| Abiquiu-------- | 40 | \| 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 |
|  |  | Seepage, bottom layer | 1.00 |  |  |
| 50 : |  |  |  |  |  |
| Stout---------- | 45 | Very limited Depth to bedrock |  | Very limited |  |
|  |  |  | 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Seepage, bottom layer | 1.00 | Seepage | 1.00 |
|  |  | slope | 0.16 | Slope | 1.00 |
| Kunz | 40 | \|Very limited Slow water movement Slope | 1.00 0.16 | Very limited slope | 1.00 |
| 54 : |  |  |  |  |  |
| Capillo- | 90 | Very limited Slow water movement | 1.00 | Somewhat limited <br> Slope | 0.32 |

Table 12.--Sewage disposal--Continued


Table 12.--Sewage disposal--Continued


Table 12.--Sewage disposal--Continued

| Map symbol <br> 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 |
| 110: |  |  |  |  |  |
| Vessilla-------- | 45 | \|Very limited Depth to bedrock | 1.00 | \|Very limited |  |
|  |  |  |  | Depth to hard | 1.00 |
|  |  |  |  |  |  |
|  |  | Seepage, bottom | 1.00 | Seepage | 1.00 |
|  |  | slope | 1.00 | Slope | 1.00 |
| Menefee-------- | 25 | \| Very limited |  | \|Very limited |  |
|  |  | Depth to bedrock | 1.00 | Depth to soft | 1.00 |
|  |  | Slope | 1.00 | slope | 1.00 |
| Orlie----------- | 20 | Very limited Slow water movement | 1.00 | Somewhat limited Slope | 0.68 |
| 113: |  |  |  |  |  |
| Teromote------- | 55 | \|Very limited Slow water movement | 1.00 | Somewhat limited Slope | 0.68 |
| Ruson----------- | 25 | $\left\lvert\, \begin{gathered} \text { Very limited } \\ \text { Slow water } \\ \text { movement } \end{gathered}\right.$ | 1.00 | Not limited |  |
|  |  |  |  |  |  |
| 115 : |  |  |  |  |  |
| Menefee--------- | 80 | \|Very limited Depth to bedrock | 1.00 | Very limited |  |
|  |  |  |  | Depth to soft | 1.00 |
|  |  |  |  | bedrock |  |
|  |  | Slope | 1.00 | slope | 1.00 |
| 117: |  |  |  |  |  |
| Chamita-------- | 85 | Very limited |  | \|Very limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 |
|  |  | Depth to saturated zone | 1.00 | Seepage | 1.00 |
|  |  | Seepage, bottom layer | 1.00 | Depth to saturated zone | 1.00 |
|  |  | Slow water movement | 0.72 |  |  |
| 118: |  |  |  |  |  |
| Hesperus------- | 35 | Somewhat limited Slow water movement | 0.72 | Somewhat limited |  |
|  |  |  |  | Seepage | 0.28 |
|  |  |  |  | slope | 0.08 |
| Pastorius------- | 25 | Somewhat limited ${ }^{\text {Slow }}$ ( 0.46 |  | Somewhat limited Seepage |  |
|  |  | Slow water movement | 0.46 |  | 0.53 |
|  |  | Large stones content | 0.18 | Slope | 0.08 |
| Chamita--------- | 20 | Very limited  <br> Flooding 1.00 |  | Very limited |  |
|  |  |  |  | Flooding | 1.00 |
|  |  | Depth to saturated Slow water movement | 1.00 | Depth to saturated zone Seepage | 1.00 |
|  |  |  | 0.72 |  | 0.28 |

Table 12.--Sewage disposal--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Septic tank absorption fields |  | Sewage lagoons |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value |
| 119 : |  |  |  |  |  |
| Roques- | 45 | \|Very limited Slow water movement | 1.00 |  | 0.68 |
| Nusmag- | 35 | ```\|Very limited Slow water movement Depth to saturated zone``` | 1.00 <br> 0.65 | Somewhat limited Depth to saturated zone | 0.02 |
| 125 : |  |  |  |  |  |
| Hogg- | 55 | \|Very limited Slow water movement | \| 1.00 | Somewhat limited Slope | 0.92 |
| Mara-- | 30 | \|Very limited Slow water movement | 1.00 | Very limited Slope | 11.00 |
| 127 : |  |  |  |  |  |
| Rombo---------- | 45 | \| Very limited |  | Very limited |  |
|  |  | Slow water movement | 1.00 | Depth to soft bedrock | 1.00 |
|  |  | Depth to bedrock | 1.00 | Slope | 1.00 |
|  |  | Slope | 11.00 |  |  |
| Wiggler--------- | 40 | \| Very limited |  | Very limited |  |
|  |  | Depth to bedrock | \| 1.00 | Depth to soft bedrock | 1.00 |
|  |  | Slope | 1.00 | slope | 11.00 |
| 129 : |  |  |  |  |  |
| Nusmag--------- | 45 | Very limited |  | Somewhat limited Depth to saturated zone |  |
|  |  | Slow water movement | 11.00 |  | 0.02 |
|  |  | Depth to saturated zone | 0.65 |  |  |
| Tottles-------- | 35 | \| Very limited |  | Very limited Depth to saturated zone |  |
|  |  | Slow water movement | \| 1.00 |  | 11.00 |
|  |  | Depth to saturated zone | \| 1.00 |  |  |
| 130: |  |  |  |  |  |
| Topetaul------- | 45 | \| Very limited |  | Very limited Slope |  |
|  |  | Slow water movement | \| 1.00 |  | 11.00 |
|  |  | Slope | 0.96 | Large stones content | 0.99 |
|  |  | Large stones content | 0.31 | Seepage | 0.53 |
| Hogg------------ | 35 | \| Very limited |  | Very limited Slope | 1.00 |
|  |  | Slow water movement | 11.00 |  |  |
|  |  | \| Slope | 0.96 |  |  |

Table 12.--Sewage disposal--Continued


Table 12.--Sewage disposal--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct } . \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Septic tank absorption fields |  | Sewage lagoons |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value |
| 141: |  |  |  |  |  |
| Carjo----------- | 30 | Very limited Slow water movement | \| 1.00 | Very limited Depth to hard bedrock | 1.00 |
|  |  | Depth to bedrock | 11.00 | Slope | 1.00 |
|  |  | slope | 0.04 | Seepage | 0.27 |
| Vamer----------- | 30 | Very limited Depth to bedrock |  | Very limited |  |
|  |  |  | \| 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Slope | 1.00 | Slope | 1.00 |
|  |  |  |  | Seepage | 0.27 |
| 142: |  |  |  |  |  |
| Pinavetes------- | 85 | Very limited |  | Very limited |  |
|  |  | Filtering capacity | \| 1.00 | Seepage | 1.00 |
|  |  | slope | 0.01 | Slope | 1.00 |
| 145 : |  |  |  |  |  |
| Dermala--------- | 50 | Very limited |  | Very limited |  |
|  |  | Slope | 11.00 | Slope | 1.00 |
|  |  | Slow water movement | \| 1.00 | Seepage | 0.53 |
| Rosced---------- | 35 | Very limited Slope |  | Very limited |  |
|  |  |  | 1.00 | slope | 1.00 |
|  |  |  |  | Seepage | 1.00 |
| 146: |  |  |  |  |  |
| Parida---------- | 45 | Very limited Slope |  | Very limited |  |
|  |  |  | 1.00 | slope | 1.00 |
|  |  |  |  | Seepage | 1.00 |
| Palacid--------- | 40 | Very limited |  | Very limited |  |
|  |  | Slow water movement | 11.00 | slope | 1.00 |
|  |  | Slope | 11.00 | Seepage | 0.53 |
| 147 : |  |  |  |  |  |
| Dermala--------- | 45 | \| Very limited |  | Very limited |  |
|  |  | Slope | 11.00 | Slope | 1.00 |
|  |  | Slow water movement | 0.46 | Seepage | 0.53 |
| Chimayo--------- | 40 | Very limited Depth to bedrock |  | Very limited |  |
|  |  |  | 11.00 | Depth to hard bedrock | 1.00 |
|  |  | Slope | 1.00 | Slope | 1.00 |
|  |  | Seepage, bottom layer | \| 1.00 | Seepage | 1.00 |
| 148: |  |  |  |  |  |
| Chita- | 85 | Very limited Slow water movement | \| 1.00 | Somewhat limited Seepage Slope | $\left\lvert\, \begin{aligned} & 0.53 \\ & 0.08 \end{aligned}\right.$ |

Table 12.--Sewage disposal--Continued


Table 12.--Sewage disposal--Continued


Table 12.--Sewage disposal--Continued

| Map symbol and soil name | Pct. <br> of map unit | Septic tank absorption fields |  | Sewage lagoons |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 209 : |  |  |  |  |  |
| Crubas---------- | 40 | \| Very limited |  | \|Very limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 |
|  |  | Slow water movement | 1.00 | Depth to saturated zone | 1.00 |
|  |  | Depth to saturated zone | 1.00 |  |  |
| Bywell---------- | 30 | Very limited  <br> Flooding 1.00 |  | \| Very limited |  |
|  |  |  |  | Flooding | 1.00 |
|  |  | Depth to saturated zone | 1.00 | Seepage | 1.00 |
|  |  | Seepage, bottom layer | 1.00 | Depth to saturated zone | 1.00 |
| Croftshaw------- | 20 |  |  | Very limited |  |
|  |  | Seepage, bottom layer | 1.00 | Seepage | 1.00 |
|  |  | Slow water movement | 1.00 | Slope | 1.00 |
|  |  | Slope | 0.16 |  |  |
| 210: |  |  |  |  |  |
| Rock outcrop- | 60 | Not rated |  | Not rated |  |
| Bracos--------- | 30 | Very limited Slope |  | \|Very limited |  |
|  |  |  | 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Seepage, bottom | 1.00 | slope | 1.00 |
|  |  | layer |  |  |  |
|  |  | Depth to bedrock | 1.00 | Seepage | 1.00 |
|  |  | Large stones content | 1.00 | Large stones content | 1.00 |
| 211: |  |  |  |  |  |
| Angostura------- | 90 | Very limited |  | Very limited |  |
|  |  | slope | 1.00 | Slope | 1.00 |
|  |  | Slow water movement | 0.46 | Large stones content | 0.86 |
|  |  | Large stones content | 0.26 | Seepage | 0.53 |
| 214: |  |  |  |  |  |
| Quimera--------- | 60 | Very limited |  | \|Very limited |  |
|  |  | Depth to bedrock | 1.00 | Depth to hard bedrock | 1.00 |
|  |  | Slope | 1.00 | slope | 1.00 |
|  |  |  |  | Seepage | 0.27 |
| Vamer------------ | 25 | \|Very limited Depth to bedrock |  | \|Very limited |  |
|  |  |  | 1.00 | bedrock | 1.00 |
|  |  | Slope | 1.00 | Slope | 1.00 |
|  |  |  |  | Seepage | 0.27 |
|  |  |  |  |  |  |

Table 12.--Sewage disposal--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Septic tank absorption fields |  | Sewage lagoons |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value |
| 215 : |  |  |  |  |  |
| Saragote----------- | 45 | Very limited Slow water movement Depth to saturated zone Large stones content | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \\ & 0.08\end{aligned}\right.$ | ```\|very limited Depth to saturated zone slope Large stones content``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.32 \\ & 0.01\end{aligned}\right.$ |
| Ess----------------- | 35 | Somewhat limited |  | \|Somewhat limited |  |
|  |  | Slow water movement | 0.46 | Slope | 0.68 |
|  |  | Large stones | 0.04 | Seepage | 0.53 |
|  |  | content |  | Large stones content | 0.03 |
| 216: |  |  |  |  |  |
| Angostura---------- | 85 | \| Very limited |  | Very limited |  |
|  |  | Slope | 11.00 | Slope | 1.00 |
|  |  | Large stones content | 0.65 | Large stones content | 1.00 |
|  |  | Slow water movement | 0.46 | Seepage | 0.53 |
| 220: |  |  |  |  |  |
| Rock outcrop-------- | 40 | Not rated |  | Not rated |  |
| Vessilla----------- | 30 | Very limited Depth to bedrock |  | \|Very limited |  |
|  |  |  | 11.00 | Depth to hard bedrock | 1.00 |
|  |  | Slope | 1.00 | Slope | 1.00 |
|  |  | Seepage, bottom layer | \| 1.00 | Seepage | 0.27 |
| Menefee------------ | 20 | Very limited Depth to bedrock |  | Very limited |  |
|  |  |  | 11.00 | Depth to soft bedrock | 1.00 |
|  |  | Slope | 11.00 | Slope | 1.00 |
| 228 : |  |  |  |  |  |
| Suposo------------- | 50 | Very limited Slow water movement | \| 1.00 | Somewhat limited Slope | 0.32 |
| Brycan------------- | 35 | Very limited |  | \|Very limited |  |
|  |  | Flooding | \| 1.00 | Flooding | 1.00 |
|  |  | Slow water movement | 0.46 | Seepage | 0.53 |
| 230: |  |  |  |  |  |
| Badland----------- | 90 | Not rated |  | Not rated |  |
| 240: |  |  |  |  |  |
| Riverwash, gravelly- | 100 | 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 |

Table 12.--Sewage disposal--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 |
| 241: |  |  |  |  |  |
| Florita--------- | 55 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Seepage } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ |
| Rock outcrop-------- | 25 | Not rated |  | Not rated |  |
| Tinaja--------- | 50 | \| Very limited |  | \| Very limited |  |
|  |  | slope | 1.00 | slope | 1.00 |
|  |  | Large stones content | 0.93 | Seepage | 1.00 |
|  |  | Slow water movement | 0.46 | Large stones content | 1.00 |
| Rock outcrop--- | 30 | Not rated |  | Not rated |  |
| Penistaja------- | 85 | Not limited |  | Very limited |  |
|  |  |  |  | \| Seepage | 1.00 |
|  |  |  |  | Slope | 0.68 |
| 244: |  |  |  |  |  |
| Scholle-------- | 60 | \|Very limited Slow water movement | 1.00 | Somewhat limited |  |
|  |  |  |  | Seepage | 0.53 |
|  |  |  |  | slope | 0.08 |
| Silver--------- | 30 | Very limited Slow water movement |  | Somewhat limited |  |
|  |  |  | 1.00 | Seepage | 0.53 |
|  |  |  |  | slope | 0.08 |
| 245 : |  |  |  |  |  |
| Maia----------- | 65 | $\left\lvert\, \begin{gathered} \text { Very limited } \\ \text { Slow water } \\ \text { movement } \end{gathered}\right.$ | 1.00 | Very limited |  |
|  |  |  |  | Seepage | 1.00 |
|  |  |  |  | slope | 0.08 |
| Manzano-------- | 20 | Very limitedFlooding |  | Very limited |  |
|  |  |  | 11.00 | Flooding | 1.00 |
|  |  | ```Seepage, bottom layer Slow water movement``` | 1.00 | Seepage | 1.00 |
|  |  |  | 0.46 |  |  |
| 246: |  |  |  |  |  |
| Pena- | 85 | Somewhat limited ${ }^{\text {l }}$, 0.58 |  | Very limited |  |
|  |  | Large stones content | 0.58 | Seepage | 1.00 |
|  |  | Slope | 0.04 | Slope | 1.00 |
|  |  |  |  | Large stones content | 0.97 |
| 247: |  |  |  |  |  |
| Wenota---------- | 85 | Very limited Flooding Slow water movement |  | Very limited |  |
|  |  |  | 1.00 | Flooding | 1.00 |
|  |  |  | 1.00 | slope | 0.32 |

Table 12.--Sewage disposal--Continued


Table 12.--Sewage disposal--Continued

| Map symbol <br> 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 |
| 710: |  |  |  |  |  |
| Palon---------- | 30 | Very limited |  | \| Very limited |  |
|  |  | Slope | 1.00 | Slope | 1.00 |
|  |  | Seepage, bottom layer | 1.00 | Seepage | 1.00 |
|  |  | Large stones content | 0.01 |  |  |
| 711: |  |  |  |  |  |
| Laventana------- | 80 | Very limited |  | \| Very limited |  |
|  |  | slope | 1.00 | slope | 1.00 |
|  |  | Large stones content | 0.99 | Seepage | 0.53 |
|  |  | Slow water movement | 0.46 | Large stones content | 0.07 |
| 719 : |  |  |  |  |  |
| Alanos--------- | 80 | Very limited |  | Very limited |  |
|  |  | Slow water movement | 1.00 | slope | 1.00 |
|  |  | Slope | 1.00 | Seepage | 1.00 |
|  |  | Seepage, bottom layer | 1.00 | Large stones content | 0.98 |
|  |  | Large stones content | 0.65 |  |  |
| 802 : |  |  |  |  |  |
| Redondo-------- | 85 | Very limited |  | Very limited |  |
|  |  | slope | 1.00 | slope | 1.00 |
|  |  | Slow water movement | 0.46 | Seepage | 0.53 |
| 803 : |  |  |  |  |  |
| Rusbach-------- | 85 | Very limited  <br> Filtering 1.00 |  | Very limited |  |
|  |  |  |  | slope | 1.00 |
|  |  | Slope <br> Seepage, bottom layer | 1.00 | Seepage | 1.00 |
|  |  |  | 1.00 |  |  |
| DAM: |  |  |  |  |  |
| Dam- | 100 | Not rated |  | Not rated |  |
| W: |  |  |  |  |  |
| Water---- | 100 | Not rated |  | Not rated |  |

## Table 13.--Landfills

(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 | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \mid \text { unit } \end{array}\right\|$ | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 9 : |  |  |  |  |  |  |  |
| Pinavetes- | 50 | Somewhat limited Too sandy | 0.50 | Not limited |  | Very limited Seepage Too sandy | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ |
| Florita------- | 40 | Not limited |  | Not limited |  | Somewhat limited Seepage | 0.52 |
| 10: |  |  |  |  |  |  |  |
| Sparank----- | 55 | Somewhat limited Flooding | 0.40 | Somewhat limited Flooding | 0.40 | Not limited |  |
| San Mateo-- | 30 | Somewhat limited Flooding | 0.40 | Somewhat limited Flooding | 0.40 | Not limited |  |
| 11: |  |  |  |  |  |  |  |
| Fruitland----- | 85 | Not limited |  | Not limited |  | Somewhat limited Seepage | 0.52 |
| 12: |  |  |  |  |  |  |  |
| Pinavetes---- | 85 | Somewhat limited Too sandy | 0.50 | Not limited |  | Very limited Seepage Too sandy | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ |

Table 13.-Landfills--Continued

| $\begin{aligned} & \text { Map symbol } \\ & \text { and soil name } \end{aligned}$ | $\begin{array}{\|c} \mid \text { Pct. } \\ \mid \text { of } \\ \mid \text { map } \\ \mid \text { unit } \end{array}$ | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $18 \text { : }$ |  |  |  |  |  |  |  |
| Abiquiu--------- | 50 | Very limited  <br> Flooding 1.00 |  | Very limited Flooding | 1.00 | Too sandy | 11.00 |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone Seepage | 1.00 | Seepage | 1.00 |
|  |  | Seepage, bottom layer | 1.00 |  | 1.00 | Large stones content | 0.49 |
|  |  | Too sandy | 1.00 |  |  | Gravel content | 0.19 |
|  |  | Large stones content | 0.49 |  |  | Depth to saturated zone | 0.09 |
| Peralta--------- | 40 | ```Very limited Flooding Depth to saturated zone Too sandy``` |  | Very limited | 1.00 | Somewhat limited |  |
|  |  |  | 1.00 | Flooding Depth to saturated zone |  | Too sandy | 0.50 |
|  |  |  | 1.00 |  | 1.00 | Depth to saturated zone | 0.47 |
|  |  |  | 0.50 |  |  |  |  |
| 20: |  |  |  |  |  |  |  |
| Menefee-------- | 35 | Very limited Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | Very limited Depth to bedrock Slope | 11.00 | Very limited Depth to bedrock |  |
|  |  |  |  |  |  |  | 1.00 |
|  |  |  |  |  |  | slope | 1.00 |
| Vessilla-------- | 30 | Very limited Depth to bedrock Seepage, bottom layer Slope | $\begin{aligned} & 1.00 \\ & 1.00 \\ & 1.00 \end{aligned}$ | Very limited Depth to bedrock Slope | $\begin{array}{\|l} 1.00 \\ 1.00 \end{array}$ | Very limited Depth to bedrock |  |
|  |  |  |  |  |  |  | 1.00 |
|  |  |  |  |  |  | slope | $\begin{aligned} & 1.00 \\ & 0.52 \end{aligned}$ |
|  |  |  |  |  |  | Seepage |  |
| Rock outcrop-- | 15 | Not rated |  | Not rated |  | Not rated |  |

Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Trench sanitary landfill |  | $\begin{aligned} & \text { Area sanitary } \\ & \text { landfill } \end{aligned}$ |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 18: |  |  |  |  |  |  |  |
| Werlog---------- | 85 | Very limited  <br> Depth to 1.00 |  | Very limitedDepth to | 1.00 | Somewhat limited Too clayey | 0.50 |
|  |  |  |  |  |  |  |  |
|  |  | Seepage, bottom | 1.00 | Flooding | 0.40 | Depth to | 0.24 |
|  |  | Too clayey | 0.50 |  |  |  |  |
|  |  | Flooding | 0.40 |  |  |  |  |
| 22 : |  |  |  |  |  |  |  |
| Jocity------------- \| | 50 | Not limited |  | Not limited |  | Not limited |  |
| Gilco-------------- \| | 35 | Not limited |  | Not limited |  | Not limited |  |
| 23: |  |  |  |  |  |  |  |
| Gilco--- | 85 | Not limited |  | Not limited |  | Not limited |  |
| 24: |  |  |  |  |  |  |  |
| Jocity------------- \| | 85 | Not limited |  | Not limited |  | Not limited |  |
| 30: |  |  |  |  |  |  |  |
| San Mateo---------- | 85 | Somewhat limited Flooding | 0.40 | Somewhat limited Flooding | 0.40 | Not limited |  |
| 31: |  |  |  |  |  |  |  |
| Gobernador------ | 50 | \|Very limited Too clayey Excess sodium |  | Not limited |  |  |  |
|  |  |  | 1.00 |  |  | Too clayey | 1.00 |
|  |  |  | 1.00 |  |  | Sodium content | 1.00 |

Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. \| of map unit | Trench sanitary <br> landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | value | Rating class and limiting features | Value |
| Orlie-- | 40 | Not limited |  | Not limited |  | Not limited |  |
| Alcalde- | 85 | Somewhat limited Flooding | 0.40 | Somewhat limited Flooding | 0.40 | Not limited |  |
| Fruitland- | 85 | Not limited |  | Not limited |  | Somewhat limited Seepage | 0.52 |
| Pinitos | 40 | Not limited |  | Not limited |  | Somewhat limited Seepage | 0.52 |
| Menefee--- | 20 | ```Very limited Depth to bedrock Slope``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 10.84 \end{aligned}\right.$ | $\begin{aligned} & \text { Very limited } \\ & \text { Depth to bedrock } \\ & \text { Slope } \end{aligned}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 10.84 \end{aligned}\right.$ | ```Very limited Depth to bedrock Slope``` | $\left\lvert\, \begin{array}{\|l\|l\|} 1.00 \\ 10.84 \end{array}\right.$ |
| Vessilla--- | 20 | ```Very limited Depth to bedrock Seepage, bottom layer Slope``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \\ & 0.84 \end{aligned}\right.$ | $\begin{aligned} & \text { Very limited } \\ & \text { Depth to bedrock } \\ & \text { Slope } \end{aligned}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 10.84 \end{aligned}\right.$ | ```Very limited Depth to bedrock Slope Seepage``` | 1.00 0.84 0.52 |

Table 13.-Landfills--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct } \\ \text { of } \\ \mid \text { map } \\ \text { unit } \end{gathered}\right.$ | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $42 \text { : }$ |  |  |  |  |  |  |  |
| Walrees- | 45 | Very limited  <br> Flooding 1.00 |  | Very limited Flooding | 1.00 | Too sandy | 1.00 |
|  |  | Depth to saturated zone | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ | Depth to saturated zone | 1.00 | Seepage | 1.00 |
|  |  | Seepage, bottom layer | 1.00 | Seepage | 1.00 |  |  |
|  |  | Too sandy | 1.00 |  |  |  |  |
| Abiquiu--------- | 40 | Very limited |  | Very limited |  | Very limitedToo sandy | 1.00 |
|  |  | Flooding | 1.00 |  | 1.00 |  |  |
|  |  | Depth to | 1.00 | ```Depth to saturated zone Seepage``` | 1.00 | Seepage | 1.00 |
|  |  | Seepage, bottom layer | 1.00 | Seepage | 1.00 | Large stones content | 0.11 |
|  |  | Too sandy | 1.00 |  |  | Depth to saturated zone | 0.09 |
|  |  | Large stones content | 0.11 |  |  | Gravel content | 0.01 |
| 50 : |  |  |  |  |  |  |  |
| Stout | 45 | Very limited Depth to bedrock |  | Very limited Depth to bedrock Slope | $\begin{aligned} & 1.00 \\ & 0.16 \end{aligned}$ | Very limited Depth to bedrock |  |
|  |  |  | 1.00 |  |  |  | 1.00 |
|  |  | Seepage, bottom layer | 1.00 |  |  | Organic matter content | 1.00 |
|  |  | Organic matter content | 1.00 |  |  | Seepage | 0.52 |
|  |  | Slope | 0.16 |  |  | Slope | 0.16 |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol and soil name | $\begin{array}{\|c} \text { Pct. } \\ \left\|\begin{array}{c} \text { of } \\ \mid \text { map } \\ \mid \text { unit } \end{array}\right\| \end{array}$ | Trench sanitary landfill |  | Area sanitary landfill |  | $\begin{aligned} & \text { Daily cover for } \\ & \text { landfill } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
|  |  |  |  |  |  |  |  |
| Dula------------ | 90 | Very limited Flooding | 1.00 | Very limited Flooding | 1.00 | Very limited | 1.00 |
|  |  |  |  |  |  | Depth to saturated zone |  |
|  |  | Depth to saturated zone | 11.00 | Depth to saturated zone Seepage | 1.00 | Too sandy | 11.00 |
|  |  | Seepage, bottom layer | 1.00 |  | 1.00 | Seepage | 1.00 |
|  |  | Too sandy | 11.00 |  |  |  |  |
| 65: |  |  |  |  |  |  |  |
| Doslomas-------- | 85 | Very limited |  | Very limited Seepage | 1.00 |  | 1.00 |
|  |  | Seepage, bottom layer | 11.00 | Seepage |  | Too sandy |  |
|  |  | Too sandy | 1.00 |  |  | Seepage | 1.00 |
|  |  | Large stones content | 0.06 |  |  | Large stones content | 0.06 |
| 66 : |  |  |  |  |  |  |  |
| Encicado-------- | 90 | Very limitedFloodingToo clayey | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ | Very limited Flooding | 1.00 | Somewhat limited Too clayey | 0.50 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| 69 : |  |  |  |  |  |  |  |
| Lindrith---- | 50 | ```Very limited Seepage, bottom layer Too sandy``` | 1.000.50 | Very limited Seepage | 1.00 | Somewhat limited Seepage | 0.52 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Too sandy | 0.50 |

Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 69 : |  |  |  |  |  |  |  |
| Royosa---------- | 35 | Very limited Seepage, bottom layer | 1.00 | Very limited Seepage | 1.00 | Very limited Seepage | 1.00 |
|  |  | Too sandy | 0.50 |  |  | Too sandy | 0.50 |
| $70:$Sparham | 80 | Very limited |  | Somewhat limited Flooding | 0.40 | Very limited |  |
|  |  | Excess sodium | 1.00 |  |  | Sodium content | 1.000.50 |
|  |  | Too clayey | 0.50 |  |  | Too clayey |  |
|  |  | Flooding | 0.40 |  |  |  |  |
| 80 : |  |  |  |  |  |  |  |
| Orlie- | 45 | Not limited |  | Not limited |  | Not limited |  |
| Nalivag------------ \| | 35 | Not limited |  | Not limited |  | Not limited |  |
| 102: |  |  |  |  |  |  |  |
| Menefee-------- | 40 | ```Very limited Depth to bedrock Slope Too clayey``` |  | Very limited Depth to bedrock Slope | 1.00 | Very limited Depth to bedrock |  |
|  |  |  | 1.00 |  |  |  | 1.00 |
|  |  |  | 1.00 |  | 1.00 | Slope | 1.00 |
|  |  |  | 0.50 |  |  | Too clayey | 0.50 |
| Nalivag------------ \| | 40 | Somewhat limited Slope | 0.63 | Somewhat limited Slope | 0.63 | Somewhat limited slope | 0.63 |
| 103: |  |  |  |  |  |  |  |
| Orlie- | 80 | Not limited |  | Not limited |  | Not limited |  |

Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $106 \text { : }$ |  |  |  |  |  |  |  |
| 107: |  |  |  |  |  |  |  |
| Ruson- | 30 | \|Very limited Too clayey | 1.00 | Not limited |  | Very limited Too clayey | 1.00 |
| 108: |  |  |  |  |  |  |  |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 |
|  |  | Slope | 0.63 | slope | 0.63 | Slope | 0.63 |
|  |  |  |  |  |  | Gravel content | 0.10 |
| Ransect-- | 35 | \|Very limited Depth to bedrock | 1.00 | Not limited |  | Very limited Depth to bedrock Carbonate content | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ |
| 109: |  |  |  |  |  |  |  |
| Calendar----- | 85 | Very limited Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | Very limited Slope | 1.00 | Very limited Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill |  | ```Area sanitary landfill``` |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 119 : |  |  |  |  |  |  |  |
| Nusmag- | 35 | ```Very limited Depth to saturated zone Too clayey``` | 1.00 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Depth to } \\ & \text { saturated zone } \end{aligned}$ | 1.00 | Very limited Too clayey <br> Hard to compact | 1.00 1.00 |
| 125 : |  |  |  |  |  |  |  |
| Hogg - | 55 | Somewhat limited Too clayey | 0.50 | Not limited |  | Somewhat limited Too clayey | 0.50 |
| Mara-- | 30 | Somewhat limited <br> Too clayey | 0.50 | Not limited |  | Somewhat limited Too clayey | 0.50 |
| 127: |  |  |  |  |  |  |  |
| Rombo | 45 | Very limited |  | Very limited Depth to bedrock Slope | 1.001.00 | Very limited |  |
|  |  | \| Depth to bedrock | 1.00 |  |  | Too clayey | 1.00 |
|  |  | Too clayey | $1.00$ |  |  | Depth to bedrock | 1.00 |
|  |  | Slope |  |  |  | Slope | 1.00 |
| Wiggler-------- | 40 | Very limited Depth to bedrock Slope |  | Very limited Depth to bedrock Slope |  | Very limited |  |
|  |  |  | 1.00 |  | 1.00 | Depth to bedrock | 1.00 |
|  |  |  | 1.00 |  | 1.00 | Slope | 1.00 |
|  |  |  |  |  |  | Gravel content | 0.01 |
| 129 : |  |  |  |  |  |  |  |
| Nusmag---------- | 45 | ```\| Very limited Depth to saturated zone Too clayey``` |  | Very limited Depth to saturated zone | 1.00 | Very limited Too clayey | 1.00 |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 1.00 |  |  | Hard to compact | 1.00 |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $140 \text { : }$ |  |  |  |  |  |  |  |
| Espiritu-------- | 45 | Slope | 1.00 | Very limited Slope | 1.00 | Slope | 1.00 |
|  |  | Large stones content | 0.29 |  |  | Large stones content | 0.29 |
|  |  |  |  |  |  | Gravel content | 0.01 |
| Wauquie-------- | 35 | Very limited |  | Very limited | 1.00 | Very limited |  |
|  |  | slope | 1.00 | slope |  | slope | 1.00 |
|  |  | Large stones content | 0.51 |  |  | Seepage | 0.52 |
|  |  |  |  |  |  | Large stones content | 0.51 |
| 141: |  |  |  |  |  |  |  |
| Capillo--------- | 35 | Somewhat limited Too clayey | 0.50 | Not limited |  | Somewhat limited Too clayey |  |
|  |  |  |  |  |  |  | 0.50 |
| Carjo----------- | 30 | Very limited Depth to bedrock Too clayey slope |  | Very limited Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.04 \end{aligned}\right.$ | Very limited Too clayey Depth to bedrock Slope |  |
|  |  |  | 1.00 |  |  |  | 1.00 |
|  |  |  | 1.00 |  |  |  | 1.00 |
|  |  |  | 0.04 |  |  |  | 0.04 |
| Vamer------------ | 30 | \|Very limited $\quad$ Depth to bedrock |  | Very limited Depth to bedrock Slope | 1.001.00 | Very limited |  |
|  |  |  | 1.00 |  |  | Depth to bedrock | 1.00 |
|  |  |  | 1.00 |  |  | Slope | 1.00 |
|  |  |  | 0.50 |  |  | Too clayey | 0.50 |

Table 13.-Landfills--Continued

| Map symbol and soil name | pct. \| of map unit | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | \|Value | Rating class and limiting features | Value |
| $142 \text { : }$ <br> Pinavetes-- | 85 | $\begin{aligned} & \text { Somewhat limited } \\ & \text { Too sandy } \\ & \text { Slope } \end{aligned}$ | $\left\lvert\, \begin{array}{\|l\|} 0.50 \\ 10.01 \end{array}\right.$ | Somewhat limited Slope | 0.01 | $\begin{array}{\|l} \text { Very limited } \\ \text { Seepage } \\ \text { Too sandy } \\ \text { Slope } \end{array}$ | $\begin{array}{\|l} 1.00 \\ 0.50 \\ 10.01 \end{array}$ |
| $\begin{aligned} & 145: \\ & \text { Dermala-- } \end{aligned}$ | 50 | $\begin{aligned} & \text { \|Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 11.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 |
| Rosced- | 35 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Too sandy } \end{aligned}$ | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 11.00 | $\begin{array}{\|l} \mid \text { Very limited } \\ \text { Slope } \\ \text { Too sandy } \\ \text { Seepage } \\ \text { Gravel content } \end{array}$ | $\begin{array}{\|l\|l\|} 1.00 \\ 1.00 \\ 1.00 \\ 0.93 \end{array}$ |
| $\begin{aligned} & \text { 146: } \\ & \quad \text { Parida---- } \end{aligned}$ | 45 | $\begin{aligned} & \text { \|Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Seepage } \\ & \text { Gravel content } \end{aligned}$ | $\begin{array}{\|l} 1.00 \\ 0.52 \\ 0.16 \end{array}$ |
| Palacid-- | 40 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 11.00 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Gravel content } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.01 \end{aligned}\right.$ |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | \|Value | Rating class and limiting features | Value |
| $\begin{aligned} & \text { 170: } \\ & \text { Sedillo--- } \end{aligned}$ | 85 | Somewhat limited Large stones content | 0.86 | Not limited |  | Somewhat limited Large stones content Seepage | 0.86 |
| 173: Oelop----- | 85 | Not limited |  | Not limited |  | Not limited |  |
| $\begin{aligned} & 180: \\ & \text { Oelop---- } \end{aligned}$ | 90 | Not limited |  | Not limited |  | Not limited |  |
| 182 : Oelop-- | 90 | Not limited |  | Not limited |  | Not limited |  |
| $\begin{aligned} & \text { 190: } \\ & \text { Sedillo--- } \end{aligned}$ | 90 | Somewhat limited <br> Large stones content | 0.94 | Not limited |  | Somewhat limited Large stones content Seepage | 0.94 |
| $\begin{aligned} & 200: \\ & \text { Katlon } \end{aligned}$ | 85 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Too clayey } \end{array}$ | $\begin{array}{\|l\|} 1.00 \\ 10.50 \end{array}$ | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \end{aligned}$ | 1.00 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Too clayey } \end{array}$ | $\begin{array}{\|l\|} 1.00 \\ 0.50 \end{array}$ |

Table 13.-Landfills--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \end{gathered}\right.$ | Trench sanitary landfill |  | ```Area sanitary landfill``` |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 201: |  |  |  |  |  |  |  |
| Lobat----- | 45 | Very limited |  | Very limited Slope | 1.00 | Very limited |  |
|  |  | \| Slope | 1.00 |  |  | Slope | 1.00 |
|  |  | Too clayey | 0.50 |  |  | Too clayey | 0.50 |
|  |  |  |  |  |  | Gravel content | 0.01 |
| Abreu----------- | 40 | Very limited \| |  | Very limited Slope | 1.00 | Very limited |  |
|  |  | slope | 1.00 |  |  | Slope | 1.00 |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 0.01 | Gravel content | 0.63 |
|  |  | Too clayey | 0.50 |  |  | Too clayey | 0.50 |
|  |  |  |  |  |  | Depth to bedrock | 0.01 |
| 203: |  |  |  |  |  |  |  |
| Nabor | 55 | Very limited |  | Very limited Slope | 1.00 | Very limited |  |
|  |  | slope | 1.00 |  |  | slope | 1.00 |
|  |  | Too clayey | 0.50 |  |  | Too clayey | 0.50 |
| Elbuck--------- | 30 | Somewhat limitedSlope |  | Somewhat limited Slope | 0.84 | Somewhat limited |  |
|  |  |  | 0.84 |  |  | Slope | 0.84 |
|  |  | Too clayey | 0.50 |  |  | Gravel content | 0.56 |
|  |  |  |  |  |  | Too clayey | 0.50 |
| 206: |  |  |  |  |  |  |  |
| Angostura------- | 60 | Very limited |  | Very limited Slope | 1.00 | Very limited |  |
|  |  | Slope <br> Too clayey <br> Large stones content | 1.00 |  |  | Slope | 1.00 |
|  |  |  | 0.50 |  |  | Too clayey | 0.50 |
|  |  |  | 0.29 |  |  | Large stones content | 0.29 |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued


Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol <br> and soil name | Pct. <br> of <br> map <br> unit | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 215: |  |  |  |  |  |  |  |
| Saragote-------- | 45 | ```Very limited Depth to saturated zone Too clayey``` | 1.00 | Very limited Depth to saturated zone | 1.00 | Somewhat limited <br> Too clayey | 0.50 |
|  |  |  | 0.50 |  |  | Depth to saturated zone | 0.24 |
|  |  | Large stones content | 0.21 |  |  | Large stones content | 0.21 |
| Ess------------- | 35 | Somewhat limited Large stones content | 0.09 | Not limited |  | Somewhat limited |  |
|  |  |  |  |  |  | Gravel content | 0.23 |
|  |  |  |  |  |  | Large stones content | 0.09 |
| 216: |  |  |  |  |  |  |  |
| Angostura------- | 85 | Very limited |  | Very limitedSlope | 1.00 | Very limited |  |
|  |  | slope | 1.00 |  |  | slope | 1.00 |
|  |  | Large stones content | 0.61 |  |  | Large stones content | 0.61 |
|  |  |  |  |  |  | Gravel content | 0.03 |
| 220: |  |  |  |  |  |  |  |
| Rock outcrop- | 40 | Not rated |  | Not rated |  | Not rated |  |
| Vessilla-------- | 30 | Very limited |  | Very limitedSlope | 1.00 | Very limited |  |
|  |  | Slope | 1.00 |  |  | Depth to bedrock | 1.00 |
|  |  | Depth to bedrock | 1.00 | Depth to bedrock | 1.00 | slope | 1.00 |
|  |  | Seepage, bottom layer | 1.00 |  |  | Seepage | 0.52 |

Table 13.-Landfills--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \mid \text { map } \\ \mid \text { unit } \end{gathered}\right.$ | Trench sanitary landfill |  | Area sanitary landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | \| Value | Rating class and limiting features | \|Value |
| 220: |  |  |  |  |  |  |  |
| Menefee------------ \| | 20 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Depth to bedrock } \end{aligned}$ | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Depth to bedrock } \end{aligned}$ | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ | Very limited Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ |
| 228 : |  |  |  |  |  |  |  |
| Suposo------------- | 50 | \|Very limited Too clayey | 1.00 | Not limited |  | Very limited Too clayey | 1.00 |
| Brycan------------- | 35 | Very limited Flooding Too clayey | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ | Very limited Flooding | 11.00 | Somewhat limited Too clayey | 0.50 |
| 230: |  |  |  |  |  |  |  |
| Badland------------ | 90 | Not rated |  | Very limited Depth to bedrock | 1.00 | Not rated |  |
|  |  |  |  | slope | 1.00 |  |  |
| 240: |  |  |  |  |  |  |  |
| Riverwash, gravelly- | 100 |  |  |  |  | Very limited |  |
|  |  | Flooding | 1.00 | Flooding | 1.00 | Depth to saturated zone | 1.00 |
|  |  | Depth to saturated zone | 1.00 | Depth to saturated zone | 1.00 | Too sandy | 1.00 |
|  |  | Too sandy | 1.00 |  |  | Seepage | 1.00 |
|  |  |  |  |  |  | Gravel content | 0.01 |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Trench sanitary landfill |  | ```Area sanitary landfill``` |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $245:$ <br> Manzano | 20 | Very limited Flooding Seepage, bottom layer | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ | Very limited Flooding | 1.00 | Not limited |  |
| $\begin{aligned} & 246: \\ & \text { Pena- } \end{aligned}$ | 85 | Somewhat limited <br> Large stones content <br> Slope | $\begin{aligned} & 0.83 \\ & 0.04 \end{aligned}$ | Somewhat limited Slope | 0.04 | Somewhat limited <br> Large stones content <br> Seepage <br> Slope | $\left\lvert\, \begin{aligned} & 0.83 \\ & 0.52 \\ & 0.04 \end{aligned}\right.$ |
| $247 \text { : }$ <br> Wenota | 85 | Very limited Flooding | 1.00 | Very limited Flooding | 1.00 | Not limited |  |
| $248:$ <br> Hagerman | 45 | Very limited Depth to bedrock | 1.00 | Not limited |  | Very limited Depth to bedrock | 1.00 |
| Silver- | 40 | Not limited |  | Not limited |  | Not limited |  |
| 249 : |  |  |  |  |  |  |  |
| Losmarios------ | 85 | Very limited Slope | 1.00 | Very limited slope | 1.00 | Very limited Hard to compact Slope | $\begin{aligned} & 1.00 \\ & 1.00 \end{aligned}$ |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill |  | ```Area sanitary```landfill |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 704: |  |  |  |  |  |  |  |
| Chrishall------- | 80 | \|Very limited | |  | Very limited | 1.00 | Somewhat limited |  |
|  |  | Flooding | 1.00 1.00 | Flooding |  | Gravel content | 0.77 |
|  |  | Seepage, bottom layer | 1.00 | Seepage | 1.00 | Seepage | 0.52 |
|  |  | Slope | 0.01 | Slope | 0.01 | Slope | 0.01 |
| 710: |  |  |  |  |  |  |  |
| Calaveras------ | 50 | Very limited \| |  | Very limited Slope | 1.00 | Very limited |  |
|  |  | slope | 1.00 |  |  | Slope | 1.00 |
|  |  | Large stones | 1.00 |  |  | Large stones | 1.00 |
| Palon---------- | 30 | Very limited |  | Very limitedSlope | 1.00 | Very limited <br> Slope | 1.00 |
|  |  | Slope | 1.00 |  |  |  |  |
|  |  | Seepage, bottom layer | 1.00 | Seepage | 1.00 | Seepage | 0.52 |
|  |  | Too sandy | 0.500.42 |  |  |  | 0.50 |
|  |  | Large stones content |  |  |  | Large stones content | 0.42 |
|  |  |  |  |  |  | content Gravel content | 0.10 |
| 711: |  |  |  |  |  |  |  |
| Laventana------- | 80 | Very limited |  | Very limited Slope | 1.00 | Very limited | 1.00 |
|  |  |  | 1.00 |  |  | Slope |  |
|  |  | Large stones | 1.00 |  |  | Large stones | 11.00 |

Table 13.-Landfills--Continued


Table 13.-Landfills--Continued

| Map symbol and soil name | Pct. of map unit | Trench sanitary landfill |  | ```Area sanitary landfill``` |  | Daily cover for landfill |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | \|Value |
| W: Water- | 100 | Not rated |  | Not rated |  | Not rated |  |

Table 14.--Source of gravel and sand
(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. 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. <br> of map unit | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| 9 : |  |  |  |  |  |
| Pinavetes------- | 50 | \| Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.10 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.12 |
| Florita--------- | 40 | \| Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.04 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.06 |
| 10: |  |  |  |  |  |
| Sparank-------- | 55 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer |  |
|  |  | Thickest layer | 0.00 | Thickest layer | $0.00$ |
| San Mateo------- | 30 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 11: |  |  |  |  |  |
| Fruitland------- | 85 | \| Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.02 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.04 |
| 12: |  |  |  |  |  |
| Pinavetes------- | 85 | Poor |  | Fair |  |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.10$ |
|  |  | Thickest layer | $0.00$ | Bottom layer | $0.12$ |
| 18: |  |  |  |  |  |
| Abiquiu--------- | 50 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Peralta-------- | 40 | \| Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.07 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.19 |
| 20 : |  |  |  |  |  |
| Menefee-------- | 35 | Poor |  | Poor |  |
|  |  | Thickest layer | $0.00$ | Bottom layer | $0.00$ |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.00$ |
| Vessilla-------- | 30 | Poor |  | \|Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.04 |
| Rock outcrop-------- | 15 | Not rated |  | Not rated |  |
| 21: |  |  |  |  |  |
| Werlog---------- | 85 | Poor |  | \|Fair |  |
|  |  | Thickest layer |  | Thickest layer |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.20 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | \|Value | Rating class | Value |
| 22 : |  |  |  |  |  |
| Jocity--------- | 50 | \| Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.03 |
| Gilco----------- | 35 | \| Poor |  | \|Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | $0.09$ |
| 23: |  |  |  |  |  |
| Gilco---------- | 85 |  |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 24 : |  |  |  |  |  |
| Jocity--------- | 85 | \| Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 30: |  |  |  |  |  |
| San Mateo------- | 85 | \| Poor |  | Fair |  |
|  |  | Bottom layer | $0.00$ | Bottom layer | $0.00$ |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.03$ |
| 31: |  |  |  |  |  |
| Gobernador------ | 50 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Orlie---------- | 40 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 34 : |  |  |  |  |  |
| Alcalde-------- | 85 | \| Poor |  | Poor |  |
|  |  | Bottom layer | $0.00$ | Bottom layer |  |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.00$ |
| 39: |  |  |  |  |  |
| Fruitland------- | 85 | Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.02 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.04 |
| 40 : |  |  |  |  |  |
| Pinitos-------- | 40 | Poor |  | Poor |  |
|  |  | \| Bottom layer |  | Bottom layer | $0.00$ |
|  |  | Thickest layer | 0.00 | Thickest layer | $0.00$ |
| Menefee-------- | 20 | Poor |  | Poor |  |
|  |  | \| Bottom layer |  | Bottom layer | $0.00$ |
|  |  | Thickest layer | 0.00 | Thickest layer | $0.00$ |
| Vessilla-------- | 20 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
| 42 : |  |  |  |  |  |
| Walrees--------- | 45 | \| Poor |  | \|Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.05 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| 42 : |  |  |  |  |  |
| Abiquiu------------ | 40 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 50: |  |  |  |  |  |
| Stout--------------- | 45 | Poor |  | \|Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.03 |
| Kunz---------------- | 40 | \| Poor |  | \| Fair |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.03 |
| $54:$ |  |  |  |  |  |
| Capillo------------ | 90 | Poor <br> Bottom layer | 0.00 | Poor <br> Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 60: |  |  |  |  |  |
| Sparham------------ | 85 | Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.03 |
| 61: |  |  |  |  |  |
| Colomex------------ | 85 | \| Poor |  | \| Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.11 |
| 64 : |  |  |  |  |  |
| Dula--------------- | 90 | Poor |  | \|Fair |  |
|  |  | Bottom layer |  | Thickest layer |  |
|  |  | Thickest layer | $0.00$ | Bottom layer | $0.06$ |
| 65 : |  |  |  |  |  |
| Doslomas---------- | 85 | Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 66 : |  |  |  |  |  |
| Encicado----------- | 90 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
| 69 : |  |  |  |  |  |
| Lindrith----------- | 50 | \| Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.06 |
| Royosa------------- | 35 | Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.05 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.08 |
| 70: |  |  |  |  |  |
| Sparham------------ | 80 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | $\begin{aligned} & \text { Pct. } \\ & \text { of } \\ & \text { map } \\ & \text { unit } \end{aligned}$ | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| 80: |  |  |  |  |  |
| Orlie | 45 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Nalivag---------- | 35 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 102: |  |  |  |  |  |
| Menefee-------- | 40 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Nalivag--------- | 40 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.00$ |
| 103: |  |  |  |  |  |
| Orlie---------- | 80 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 106: |  |  |  |  |  |
| Amal | 85 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.00$ |
| 107: |  |  |  |  |  |
| Berryman-------- | 55 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Ruson----------- | 30 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 108: |  |  |  |  |  |
| Peney---------- | 50 | Poor |  | Poor |  |
|  |  | Thickest layer | $0.00$ | Bottom layer | $0.00$ |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.00$ |
| Ransect-------- | 35 | Poor |  | Poor |  |
|  |  | Thickest layer | $0.00$ | Bottom layer | $10.00$ |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.00$ |
| 109 : |  |  |  |  |  |
| Calendar------- | 85 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 110: |  |  |  |  |  |
| Vessilla-------- | 45 | Poor |  | Fair |  |
|  |  | \| Bottom layer | 0.00 | Bottom layer | 0.04 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.04 |
| Menefee--------- | 25 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| 110: |  |  |  |  |  |
| Orlie-------------- | 20 | Poor |  | \| Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 113 : |  |  |  |  |  |
| Teromote----------- | 55 | Poor |  | \| Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Ruson--------------- | 25 | \| Poor |  | \| Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 115 : |  |  |  |  |  |
| Menefee------------ | 80 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 117 : |  |  |  |  |  |
| Chamita------------ | 85 | \| Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.04 |
| 118: |  |  |  |  |  |
| Hesperus----------- | 35 | Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Pastorius---------- | 25 | \| Poor |  | \| Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Chamita------------ \| | 20 | \| Poor |  | \| Poor |  |
|  |  | Thickest layer | $0.00$ | Bottom layer |  |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.00$ |
| 119 : |  |  |  |  |  |
| Roques------------- | 45 | \| Poor |  | \| Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Nusmag-------------- | 35 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 125: |  |  |  |  |  |
| Hogg--------------- | 55 | \| Poor |  | \| Poor |  |
|  |  | Thickest layer |  | Bottom layer |  |
|  |  | Bottom layer | 0.00 | Thickest layer | $0.00$ |
| Mara---------------- | 30 | \| Poor |  | \| Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 127 : |  |  |  |  |  |
| Rombo-------------- | 45 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | \|Value | Rating class | \|Value |
| 127: |  |  |  |  |  |
| Wiggler--------- | 40 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 129 : |  |  |  |  |  |
| Nusmag--------- | 45 | \| Poor |  | Poor |  |
|  |  | Bottom layer | $0.00$ | Bottom layer | 0.00 |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.00$ |
| Tottles-------- | 35 | \| Poor |  | Poor |  |
|  |  | Thickest layer |  | Thickest layer | $0.00$ |
|  |  | Bottom layer | $0.00$ | Bottom layer | $10.00$ |
| 130: |  |  |  |  |  |
| Topetaul------- | 45 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Hogg------------ | 35 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 132: |  |  |  |  |  |
| Stout | 40 | Poor |  | Poor |  |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.00$ |
|  |  | Bottom layer | $0.00$ | Bottom layer | $10.00$ |
| Carjo----------- | 20 | \| 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 |  |
| 133: |  |  |  |  |  |
| Carrick-------- | 90 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | $0.00$ |
|  |  | Bottom layer | 0.00 | Thickest layer | $0.00$ |
| 136: |  |  |  |  |  |
| Elpedro-------- | 80 | \| Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 137: |  |  |  |  |  |
| Yata | 50 | \| Poor |  | Poor |  |
|  |  | Thickest layer |  | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Eody----------- | 40 | \| Poor |  | Poor |  |
|  |  | Bottom layer |  | Bottom layer |  |
|  |  | Thickest layer | 0.00 | Thickest layer | $0.00$ |
| 140: |  |  |  |  |  |
| Espiritu-------- | 45 | \| Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.03 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | \|Value | Rating class | Value |
| 140: |  |  |  |  |  |
| Wauquie------------ | 35 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 141: |  |  |  |  |  |
| Capillo------------ | 35 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Carjo-------------- | 30 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Vamer--------------- | 30 | Poor |  | \| Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 142: |  |  |  |  |  |
| Pinavetes---------- | 85 | \| Poor |  | Fair |  |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.10$ |
|  |  | Bottom layer | $0.00$ | Bottom layer | $0.12$ |
| 145 : |  |  |  |  |  |
| Dermala------------ | 50 | \| Poor |  | \| Poor |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
| Rosced------------- | 35 | \| Poor |  | \| Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.04 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.57 |
| 146: |  |  |  |  |  |
| Parida------------ | 45 | \| Poor |  | \|Fair |  |
|  |  | Bottom layer |  | Thickest layer |  |
|  |  | Thickest layer | $0.00$ | Bottom layer | $0.04$ |
| Palacid----------- | 40 | \| Poor |  | \| Poor |  |
|  |  | Bottom layer | $0.00$ | Thickest layer |  |
|  |  | Thickest layer | $0.00$ | Bottom layer | $0.00$ |
| 147: |  |  |  |  |  |
| Dermala------------ | 45 | \| Poor |  | \|Poor |  |
|  |  | \| Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
| Chimayo------------ | 40 | \| Poor |  | \|Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.03 |
| 148: |  |  |  |  |  |
| Chita-------------- | 85 | \| Poor |  | Poor |  |
|  |  | Thickest layer |  | Thickest layer |  |
|  |  | Bottom layer | 0.00 | Bottom layer | $0.00$ |
| 149 : |  |  |  |  |  |
| Yarts-------------- | 80 | Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.03 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | Pct. <br> of map unit | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| $151 \text { : }$ |  |  |  |  |  |
| Razito | 45 | Thickest layer | 0.00 | Bottom layer | 0.10 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.10 |
| Fruitland------- | 40 | \| Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.07 |
| 170 : |  |  |  |  |  |
| Sedillo--------- | 85 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | $0.00$ |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.00$ |
| 173: |  |  |  |  |  |
| Oelop---------- | 85 | Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.04 |
| 180: |  |  |  |  |  |
| Oelop----------- | 90 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 182: |  |  |  |  |  |
| Oelop----------- | 90 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 190: |  |  |  |  |  |
| Sedillo--------- | 90 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 200: |  |  |  |  |  |
| Katlon---------- | 85 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
| 201: |  |  |  |  |  |
| Lobat----------- | 45 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
| Abreu---------- | 40 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
| 203 : |  |  |  |  |  |
| Nabor----------- | 55 | \| Poor |  | Poor |  |
|  |  | Thickest layer |  | Bottom layer |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Elbuck---------- | 30 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \mid \text { map } \\ \mid \text { unit } \end{gathered}\right.$ | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | \|Value | Rating class | Value |
| 206 : |  |  |  |  |  |
| Angostura------ | 60 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Gromes--------- | 25 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
| 207: |  |  |  |  |  |
| Gromes--------- | 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 |  |
| 208: |  |  |  |  |  |
| Ess------------ | 45 | Poor |  | Poor |  |
|  |  |  | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
| Croftshaw------- | 35 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 209 : |  |  |  |  |  |
| Crubas---------- | 40 | \| Poor Thickest layer Bottom layer |  | \| Poor |  |
|  |  |  | 0.00 | Bottom layer | 0.00 |
|  |  |  | 0.00 | Thickest layer | 0.00 |
| Bywell--------- | 30 | Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.06 |
| Croftshaw------- | 20 | \| Poor <br> Bottom layer Thickest layer |  | Fair |  |
|  |  |  | 0.00 | Thickest layer | 0.00 |
|  |  |  | 0.00 | Bottom layer | 0.04 |
| 210: |  |  |  |  |  |
| Rock outcrop- | 60 | Not rated |  | Not rated |  |
| Bracos---------- | 30 | \| Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
| 211: |  |  |  |  |  |
| Angostura------ | 90 | Poor |  | Poor |  |
|  |  | Bottom layer |  | Bottom layer |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 214: |  |  |  |  |  |
| Quimera-------- | 60 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Vamer----------- | 25 | Poor <br> Thickest layer <br> Bottom layer |  | Poor |  |
|  |  |  | 0.00 | Bottom layer | 0.00 |
|  |  |  | 0.00 | Thickest layer | 0.00 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct } . \\ \text { of } \\ \text { map } \\ \text { unit } \end{gathered}\right.$ | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| 215: |  |  |  |  |  |
| Saragote----------- | 45 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Ess---------------- | 35 | \| Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
| 216: |  |  |  |  |  |
| Angostura--------- | 85 | Poor |  | Fair |  |
|  |  | Thickest layer |  | Bottom layer |  |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.04$ |
| 220: |  |  |  |  |  |
| Rock outcrop-------- | 40 | Not rated |  | Not rated |  |
| Vessilla----------- | 30 | Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | $0.00$ |
|  |  | Bottom layer | 0.00 | Bottom layer | $0.04$ |
| Menefee------------ | 20 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 228: |  |  |  |  |  |
| Suposo------------- | 50 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
| Brycan------------- | 35 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 230: |  |  |  |  |  |
| Badland----------- | 90 | Not rated |  | Not rated |  |
| 240: |  |  |  |  |  |
| Riverwash, gravelly- | 100 | \| Fair |  | Fair |  |
|  |  | Bottom layer | 0.00 | Bottom layer |  |
|  |  | Thickest layer | $0.03$ | Thickest layer | $0.70$ |
| 241: |  |  |  |  |  |
| Florita------------ | 55 | Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.04 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.04 |
| Rock outcrop-------- | 25 | Not rated |  | Not rated |  |
| 242: |  |  |  |  |  |
| Tinaja------------ | 50 | Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.04 |
| Rock outcrop-------- | 30 | Not rated |  | Not rated |  |
| 243: |  |  |  |  |  |
| Penistaja---------- | 85 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |

Table 14.--Source of gravel and sand

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| $244 \text { : }$ |  |  |  |  |  |
| Scholle | 60 | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Silver---------- | 30 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 245: |  |  |  |  |  |
| Maia----------- | 65 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| Manzano--------- | 20 | \| Poor |  | Fair |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.10 |
| 246: |  |  |  |  |  |
| Pena------------ | 85 | Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 247: |  |  |  |  |  |
| Wenota---------- | 85 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 248: |  |  |  |  |  |
| Hagerman-------- | 45 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | $0.00$ |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.00$ |
| Silver---------- | 40 | \| Poor |  | Poor |  |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
| 249 : |  |  |  |  |  |
| Losmarios------- | 85 | \| Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 302: |  |  |  |  |  |
| Puye----------- | 85 | Poor |  | Fair |  |
|  |  | Bottom layer | $0.00$ | Thickest layer | $0.00$ |
|  |  | Thickest layer | $0.00$ | Bottom layer | $0.08$ |
| 401: |  |  |  |  |  |
| Chiminet------- | 60 | Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.03 |
| Rock outcrop---- | 25 | Not rated |  | Not rated |  |
| 407 : |  |  |  |  |  |
| Totavi---------- | 85 | Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.01 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.02 |
|  |  |  |  |  |  |

Table 14.--Source of gravel and sand

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Potential source of gravel |  | Potential source of sand |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class | Value | Rating class | Value |
| 704: |  |  |  |  |  |
| Chrishall------ | 80 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
|  |  | Thickest layer | 0.00 | Bottom layer | 0.00 |
| 710 : |  |  |  |  |  |
| Calaveras------ | 50 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| Palon----------- | 30 | Poor |  | Fair |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.08 |
| 711: |  |  |  |  |  |
| Laventana------- | 80 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 719 : |  |  |  |  |  |
| Alanos--------- | 80 | Poor |  | Poor |  |
|  |  | \| Thickest layer | 0.00 | Bottom layer |  |
|  |  | Bottom layer | 0.00 | Thickest layer | 0.00 |
| 802: |  |  |  |  |  |
| Redondo--------- | 85 | Poor |  | Poor |  |
|  |  | Bottom layer | 0.00 | Bottom layer | 0.00 |
|  |  | Thickest layer | 0.00 | Thickest layer | 0.00 |
| 803 : |  |  |  |  |  |
| Rusbach-------- | 85 | Poor |  | Poor |  |
|  |  | Thickest layer | $0.00$ | Thickest layer | $0.00$ |
|  |  | Bottom layer | $0.00$ | Bottom layer | 0.00 |
| DAM : |  |  |  |  |  |
| Dam----------- | 100 | Not rated |  | Not rated |  |
| W : |  |  |  |  |  |
| Water---------- | 100 | Not rated |  | Not rated |  |

Table 15.--Source of reclamation material, roadfill, and topsoil
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 |
| 9 : |  |  |  |  |  |  |  |
| Pinavetes------- | 50 | Poor  <br> Wind erosion 0.00 |  | Good |  | Fair Too sandy | 0.08 |
|  |  | Too sandy | 0.08 |  |  |  |  |
|  |  | Droughty | 0.10 |  |  |  |  |
|  |  | Organic matter content low | 0.32 |  |  |  |  |
| Florita--------- | 40 | Poor | 0.00 | Good |  | \| Good |  |
|  |  | Too alkaline |  |  |  |  |  |
|  |  | Organic matter content low | 0.12 |  |  |  |  |
| 10: |  |  |  |  |  |  |  |
| Sparank--------- | 55 | \| Poor |  | Poor | $\left\lvert\, \begin{aligned} & 0.00 \\ & 0.12 \end{aligned}\right.$ | Poor |  |
|  |  | Sodium content | 0.00 | Low strength |  | Sodium content | 0.00 |
|  |  | Too clayey | 0.00 | Shrink-swell |  | Too clayey | 0.00 |
|  |  | Organic matter content low | 0.12 |  |  | Salinity | 0.50 |
|  |  | Water erosion | 0.90 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { map } \\ \mid \text { unit } \end{gathered}\right.$ | 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 |
| 18: |  |  |  |  |  |  |  |
| Peralta- | 40 | Poor |  | Fair |  | Poor |  |
|  |  | Wind erosion | 0.00 | Wetness depth | 0.89 | Salinity | 0.00 |
|  |  | Organic matter | 0.12 |  |  | Wetness depth | 0.89 |
|  |  | Sodium content | 0.90 |  |  | Sodium content | 0.90 |
|  |  | Too sandy | 0.92 |  |  | Too sandy | 0.92 |
| $20:$ |  |  |  |  |  |  |  |
| Menefee--------- | 35 | Poor |  | Poor | 0.00 | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock |  | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 | slope | 0.50 | Slope | 0.00 |
|  |  | Organic matter content low | 0.50 |  |  | Too clayey | 0.57 |
|  |  | Too clayey | 0.88 |  |  | Rock fragments | 0.88 |
|  |  | Water erosion | 0.99 |  |  |  |  |
| Vessilla-------- | 30 | Poor |  | Poor | 0.00 | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock |  | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 | Slope | 0.50 | Slope | 0.00 |
|  |  | Organic matter content low | 0.12 |  |  | Rock fragments | 0.95 |
| Rock outcrop- | 15 | Not rated |  | Not rated |  | Not rated |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct. <br> 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 |
| 30: |  |  |  |  |  |  |  |
| San Mateo------- | 85 | Poor |  | Poor |  | Poor |  |
|  |  | Sodium content | 0.00 | Low strength | 0.00 | Sodium content | 0.00 |
|  |  | Organic matter content low | 0.32 | Shrink-swell | 0.87 | Salinity | 0.50 |
|  |  | Water erosion | 0.99 |  |  | Rock fragments | 0.92 |
| 31: |  |  |  |  |  |  |  |
| Gobernador------ | 50 | Poor ${ }^{\text {P }}$ |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Sodium content | 0.00 | Shrink-swell | 0.12 | Sodium content | 0.00 |
|  |  | Too alkaline | 0.00 |  |  | Salinity | 0.00 |
|  |  | Organic matter content low | 0.12 0.50 |  |  |  |  |
|  |  | Salinity | 0.50 0.74 |  |  |  |  |
|  |  | Water erosion | 0.99 |  |  |  |  |
| Orlie----------- | 40 | Fair <br> Organic matte content low <br> Too clayey <br> Water erosion |  | PoorLow strengt |  | Fair |  |
|  |  |  | 0.92 |  | 0.00 | Rock fragments | 0.41 |
|  |  |  | 0.95 | Shrink-swell | 0.87 | Too clayey | 0.70 |
|  |  |  | 0.99 |  |  |  |  |
|  |  |  |  |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol <br> and soil name | Pct. <br> of <br> map <br> 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 |
| 34: |  |  |  |  |  |  |  |
| Alcalde-------- | 85 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Too alkaline | 0.00 | Shrink-swell | 0.12 | Salinity | 0.00 |
|  |  | Organic matter content low | 0.12 |  |  | Sodium content | 0.40 |
|  |  | Sodium content | 0.40 |  |  |  |  |
|  |  | Salinity | 0.50 |  |  |  |  |
|  |  | Droughty | 0.71 |  |  |  |  |
| 39 : |  |  |  |  |  |  |  |
| Fruitland------- | 85 | Fair |  | Good |  | \| Fair |  |
|  |  | Organic matter content low | 0.12 |  |  | Hard to reclaim (rock fragments) | 0.88 |
| 40: |  |  |  |  |  |  |  |
| Pinitos--------- | 40 | Fair |  | Good |  | Good |  |
|  |  | Organic matter content low | 0.12 |  |  |  |  |
| Menefee--------- | 20 | Poor |  | Poor <br> Depth to bedrock | 0.00 | \| Poor |  |
|  |  | Droughty | 0.00 |  |  | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | $0.00$ |  |  | Slope | 0.16 |
|  |  | Organic matter | $0.50$ |  |  | Too clayey | 0.57 |
|  |  | Too clayey | 0.88 |  |  | Rock fragments | 0.88 |

Table 15.--Source of reclamation material, roadfill, and topsoil--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: |  |  |  |  |  |  |  |
| Vessilla-------- | 20 | Poor |  | Poor | 0.00 | Poor | 0.00 |
|  |  | Droughty | 0.00 | Depth to bedrock |  | Depth to bedrock |  |
|  |  | Depth to bedrock | 0.00 |  |  | Slope | 0.16 |
|  |  | Organic matter content low |  |  |  | Rock fragments | 0.95 |
| 42 : |  |  |  |  |  |  |  |
| Walrees--------- | 45 | Fair |  | Good |  | Fair |  |
|  |  | Organic matter content low | 0.32 |  |  | Hard to reclaim (rock fragments) | 0.32 |
|  |  | Water erosion | 0.68 |  |  | Salinity | 0.88 |
|  |  | Droughty | 0.99 |  |  |  |  |
| Abiquiu--------- | 40 | Poor |  | Fair | 0.55 | Poor |  |
|  |  | Droughty | 0.00 | Cobble content |  | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Organic matter content low | 0.12 |  |  | Rock fragments | 0.00 |
|  |  | Cobble content | 0.89 |  |  |  |  |
| 50: |  |  |  |  |  |  |  |
| Stout---------- | 45 | Poor |  | Poor ${ }^{\text {Depth to bedrock }}$ | 0.00 | Poor | 0.00 |
|  |  | Droughty | 0.00 |  |  | Depth to bedrock |  |
|  |  | Depth to bedrock | 0.00 | Depth to bedrock |  | Slope | 0.84 |
|  |  | Organic matter content low | 0.12 0.74 |  |  |  |  |
|  |  | Too acid | 0.74 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--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 |
| $50:$ Kunz--- | 40 | Fair <br> Organic matter content low | 10.88 | Fair Shrink-swell | 0.87 | $\begin{array}{\|l} \text { Fair } \\ \text { Slope } \end{array}$ | 0.84 |
| Capillo---- | 90 | Poor <br> Too clayey Organic matter content low Water erosion | $\left\lvert\, \begin{aligned} & 0.00 \\ & 0.12 \\ & 0.90 \end{aligned}\right.$ | Poor <br> Low strength Shrink-swell | $\left\lvert\, \begin{aligned} & 0.00 \\ & 0.15 \end{aligned}\right.$ | \| Poor Too clayey | 0.00 |
| 60: Sparham | 85 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey Organic matter content low Sodium content | $\left\lvert\, \begin{aligned} & 0.00 \\ & 0.12 \\ & 0.40 \end{aligned}\right.$ | Low strength Shrink-swell | $\begin{aligned} & 0.00 \\ & 10.25 \end{aligned}$ | Too clayey Sodium content Salinity | $\begin{aligned} & 0.00 \\ & 0.40 \\ & 0.50 \end{aligned}$ |
| 61: Colomex | 85 | Fair |  |  |  |  |  |
|  |  | Organic matter content low Droughty <br> Cobble content | $\left\lvert\, \begin{aligned} & 0.12 \\ & 0.61 \\ & 0.97 \end{aligned}\right.$ | Cobble content | 0.19 | Rock fragments Hard to reclaim (rock fragments) | 0.00 0.00 |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct <br> 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 : |  |  |  |  |  |  |  |
| Dula- | 90 | \|Fair |  | Fair |  | Poor |  |
|  |  | Organic matter content low | 0.88 | Wetness depth | 0.06 | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Droughty | 0.94 |  |  | Wetness depth | 0.06 |
|  |  | Water erosion | 0.99 |  |  | Rock fragments | 0.90 |
| 65 : |  |  |  |  |  |  |  |
| Doslomas-------- | 85 | Fair |  | Fair | 0.99 | Poor |  |
|  |  | Organic matter content low | 0.12 | Cobble content |  | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Too clayey | 0.50 |  |  | Too clayey | 0.29 |
|  |  | Cobble content | 0.94 |  |  | Rock fragments | 0.41 |
|  |  | Droughty | 0.98 |  |  |  |  |
|  |  | Water erosion | 0.99 |  |  |  |  |
| 66 : |  |  |  |  |  |  |  |
| Encicado-------- | 90 | Fair |  | Fair | 0.87 | Poor |  |
|  |  | Too clayey | 0.02 | Shrink-swell |  | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Organic matter content low | 0.40 |  |  | Too clayey | 0.02 |
|  |  | Water erosion | 0.99 |  |  | Rock fragments | 0.99 |
| 69 : |  |  |  |  |  |  |  |
| Lindrith-------- | 50 | Fair |  | Good |  | Fair | 0.92 |
|  |  | Organic matter content low Water erosion | 0.12 |  |  | Rock fragments |  |
|  |  |  | 0.99 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol <br> and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | 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 |
| $102 \text { : }$ |  |  |  |  |  |  |  |
| Menefee--------- | 40 | Droughty | 0.00 | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 | Low strength | 0.00 | Slope | 0.00 |
|  |  | Organic matter content low | 0.50 | Shrink-swell | 0.87 | Too clayey | 0.57 |
|  |  | Too clayey | 0.88 | Slope | 0.92 | Rock fragments | 0.88 |
| Nalivag--------- | 40 | Fair |  | Poor |  | Fair |  |
|  |  | Organic matter content low | 0.88 | Low strength | 0.00 | Slope | 0.37 |
|  |  | Water erosion | 0.99 | Shrink-swell | 0.87 | Rock fragments | 0.95 |
| 103 : |  |  |  |  |  |  |  |
| Orlie---------- | 80 | Fair |  | Fair |  | Fair |  |
|  |  | Organic matter content low | 0.12 | Shrink-swell | 0.87 | Rock fragments | 0.41 |
|  |  | Too clayey | 0.95 |  |  | Too clayey | 0.55 |
|  |  | Water erosion | 0.99 |  |  |  |  |
| 106 : |  |  |  |  |  |  |  |
| Amal----------- | 85 | Fair |  | Poor |  | Fair | 0.55 |
|  |  | Organic matter content low | 0.12 | Low strength | 0.00 | Too clayey |  |
|  |  | Water erosion | 0.90 | Shrink-swell | 0.87 |  |  |
|  |  | Too clayey | 0.95 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--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 |
| 107: |  |  |  |  |  |  |  |
| Berryman-------- | 55 | Poor |  | Poor |  | Poor | 0.00 |
|  |  | Carbonate content | 0.00 | Low strength Shrink-swell | 0.00 | Carbonate content |  |
|  |  | Organic matter | 0.12 |  | 0.87 |  |  |
|  |  | Water erosion | 0.90 |  |  |  |  |
| Ruson----------- | 30 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Organic matter content low | 0.12 | Shrink-swell | 0.23 | Rock fragments | 0.41 |
|  |  | Water erosion | 0.90 |  |  |  |  |
| 108: |  |  |  |  |  |  |  |
| Peney---------- | 50 | Poor |  | Poor |  | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 |  |  | Rock fragments | 0.18 |
|  |  | Organic matter content low | 0.50 |  |  | Slope | 0.37 |
|  |  | Water erosion | 0.90 |  |  | Carbonate content | 0.98 |
|  |  | Carbonate content | 0.92 |  |  |  |  |
| Ransect--------- | 35 | Poor |  | Poor |  | Poor |  |
|  |  | Carbonate content | 0.00 | Low strength | 0.00 | Carbonate content | 0.00 |
|  |  | Organic matter content low | 0.32 | Depth to bedrock | 0.00 | Too clayey | 0.60 |
|  |  | Too clayey | 0.95 | Shrink-swell | 0.87 | Depth to bedrock | 0.99 |
|  |  | Depth to bedrock | 0.99 |  |  |  |  |
|  |  | Water erosion | 0.99 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct <br> 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 |
| $109:$ |  |  |  |  |  |  |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Organic matter | 0.12 | Depth to bedrock | 0.00 | Slope | 0.00 |
|  |  | Droughty | 0.75 | Shrink-swell | 0.12 | Rock fragments | 0.41 |
|  |  | Depth to bedrock | 0.90 | Slope | 0.50 | Depth to bedrock | 0.90 |
| 110: |  |  |  |  |  |  |  |
| Vessilla-------- | 45 | \| Poor |  | Poor |  | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 | Slope | 0.98 | Slope | 0.00 |
|  |  | Organic matter content low | 0.12 |  |  | Rock fragments | 0.95 |
| Menefee--------- | 25 | \| Poor |  | Poor |  | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 | slope | 0.98 | Slope | 0.00 |
|  |  | Organic matter content low | $0.50$ |  |  | Too clayey | 0.57 |
|  |  | Too clayey | 0.88 |  |  | Rock fragments | 0.88 |
| Orlie----------- | 20 | Fair |  | Poor |  | Fair |  |
|  |  | Organic matter content low | 0.12 | Low strength | 0.00 | Rock fragments | 0.41 |
|  |  | Water erosion | 0.90 | Shrink-swell | 0.87 | Too clayey | 0.55 |
|  |  | Too clayey | 0.95 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol <br> and soil name | Pct. <br> of <br> map <br> 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: |  |  |  |  |  |  |  |
| Teromote | 55 | Organic matter content low | 0.12 | Low strength | 0.00 | Good |  |
|  |  | Water erosion | 0.99 | Shrink-swell | 0.87 |  |  |
| Ruson----------- | 25 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Organic matter content low | 0.12 | Shrink-swell | 0.12 | Rock fragments | 0.41 |
| 115: |  |  |  |  |  |  |  |
| Menefee--------- | 80 | Poor |  | Poor |  | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 | Low strength | 0.00 | Slope | 0.00 |
|  |  | Organic matter content low | 0.50 | Slope | 0.68 | Too clayey | 0.57 |
|  |  | Too clayey | 0.88 | Shrink-swell | 0.87 | Rock fragments | 0.88 |
| 117: |  |  |  |  |  |  |  |
| Chamita--------- | 85 | Fair <br> Water erosion |  | Poor |  | Fair |  |
|  |  |  | 0.99 | Low strength | 0.00 | Wetness depth | 0.14 |
|  |  |  |  | Wetness depth | 0.14 |  |  |
|  |  |  |  | Shrink-swell | 0.91 |  |  |
| 118 : |  |  |  |  |  |  |  |
| Hesperus------- | 35 | Good |  | Poor ${ }^{\text {Low strength }}$ |  | Fair |  |
|  |  |  |  |  | 0.00 | Rock fragments | 0.99 |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 |
| 102: |  |  |  |  |  |  |  |
| 125 : |  |  |  |  |  |  |  |
| Hogg------------ | 55 | Fair |  | Poor | 0.00 | Fair | 0.01 |
|  |  | Too clayey | 0.02 | Low strength Shrink-swell |  | Too clayey |  |
|  |  | Organic matter content low | 0.32 |  | 0.12 | Rock fragments | 0.41 |
|  |  | Water erosion | 0.99 |  |  |  |  |
| Mara------------ | 30 | Fair |  | Poor |  | Fair |  |
|  |  | Organic matter content low | 0.12 | Low strength | 0.00 | Too clayey | 0.57 |
|  |  | Too clayey | 0.98 | Shrink-swell | 0.87 |  |  |
|  |  | Water erosion | 0.99 |  |  |  |  |
| 127: |  |  |  |  |  |  |  |
| Rombo----------- | 45 | \| Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Organic matter content low | 0.12 | Depth to bedrock | 0.00 | Slope | 0.00 |
|  |  | Depth to bedrock | 0.97 | Shrink-swell | 0.12 | Rock fragments | 0.24 |
|  |  | Droughty | 0.97 |  |  | Depth to bedrock | 0.97 |
| Wiggler--------- | 40 | Poor |  | Poor Depth to bedrock | 0.00 | Poor |  |
|  |  | Droughty | 0.00 |  |  | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 |  |  | Slope | 0.00 |
|  |  | Organic matter content low Water erosion | 0.18 0.99 |  |  | Rock fragments | 0.88 |
|  |  | Water erosion | 0.99 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | $\left.\begin{array}{\|c\|} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array} \right\rvert\,$ | 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: |  |  |  |  |  |  |  |
| Nusmag---------- | 45 | Poor |  | Poor |  | Poor | 10.00 |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey |  |
|  |  | Organic matter content low | 10.88 | Shrink-swell | 0.12 |  |  |
| Tottles--------- | 35 | Poor |  | Poor |  | Poor | 10.00 |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey |  |
|  |  | Organic matter | 10.92 | Wetness depth | 0.14 0.26 | Wetness depth |  |
|  |  | content low |  | Shrink-swell | 0.26 |  |  |
| 130: |  |  |  |  |  |  |  |
| Topetaul------ | 45 | $\left\lvert\, \begin{aligned} & \text { Poor } \\ & \text { Too clayey }\end{aligned}\right.$ | 0.00 | Poor <br> Cobble content | 0.00 | Poor | 10.00 |
|  |  |  |  |  |  | Hard to reclaim (rock fragments) |  |
|  |  | Organic matter content low Droughty | 0.12 | Shrink-swell | 0.20 | Rock fragments | 10.00 |
|  |  |  | 0.38 |  |  | Too clayeySlope | $\left\lvert\, \begin{aligned} & 0.00 \\ & 10.04 \end{aligned}\right.$ |
|  |  | Cobble content Too acid | 0.46 0.99 |  |  |  |  |
| Hogg------------ | 35 | Fair |  | Poor | 10.00 | Fair |  |
|  |  | Too clayey | 0.02 | Low strength |  | Too clayey | 0.01 |
|  |  | Organic matter content low | 0.12 | Shrink-swell | 0.12 | slope | 0.04 |
|  |  | Water erosion | 0.99 |  |  | Rock fragments | 0.41 |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol <br> and soil name | Pct. <br> 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 |
| 132 : |  |  |  |  |  |  |  |
| Stout----------- | 40 | Poor |  | Poor | 0.00 | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock |  | Depth to bedrock | 0.00 |
|  |  | Depth to bedrock | 0.00 |  |  | Slope | 0.16 |
|  |  | Organic matter content low | 0.12 |  |  | Rock fragments | 0.69 |
| Carjo----------- | 20 | Fair |  | Poor |  | Fair |  |
|  |  | Too clayey | 0.02 | Depth to bedrock | 0.00 | Too clayey | 0.01 |
|  |  | Organic matter content low Depth to bedrock | 0.50 |  | 0.00 | Slope | 0.16 |
|  |  |  | 0.99 | Shrink-swell | 0.12 | Rock fragments | 0.91 |
|  |  |  |  |  |  | Depth to bedrock | 0.99 |
| Rock outcrop------- | 20 | Not rated |  | Not rated |  | Not rated |  |
| 133 : |  |  |  |  |  |  |  |
| Carrick- | 90 | Fair |  | Poor | 0.00 | Fair |  |
|  |  | Too clayey | 0.02 | Low strength |  | Too clayey | 0.01 |
|  |  | Organic matter | 0.12 | Shrink-swell | 0.12 |  |  |
|  |  | Water erosion | 0.90 |  |  |  |  |
| 136: |  |  |  |  |  |  |  |
| Elpedro- | 80 | Fair |  | Poor | 0.00 | Good |  |
|  |  | Organic matter content low Water erosion | $\left\lvert\, \begin{aligned} & 0.12 \\ & 0.90\end{aligned}\right.$ | Low strength |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--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: |  |  |  |  |  |  |  |
| Yata----------- | 50 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Slope | 0.00 | Rock fragmentsSlope | 0.00 |
|  |  | Organic matter <br> content low 0.92 |  | Low strength | 0.00 |  | 0.00 |
|  |  | Cobble contentWater erosion | 0.93 | Shrink-swell | 0.26 | Too clayey | 0.00 |
|  |  |  | 0.99 | Cobble content | 0.46 | Hard to reclaim (rock fragments) | 0.00 |
| Eody------------ | 40 | Fair |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.02 | Slope | 0.00 | Slope | 0.00 |
|  |  | Organic matter 0.40 <br> content low <br> Water erosion 0.99 |  | Low strength | 0.00 | Too clayey | 0.01 |
|  |  |  |  | Shrink-swell | 0.12 |  |  |
| 140: |  |  |  |  |  |  |  |
| Espiritu-------- | 45 | Fair |  | Poor |  | Poor |  |
|  |  | Organic matter content low Cobble content | 0.12 | Slope | 0.00 | Slope | 0.00 |
|  |  |  | 0.83 0.86 | Cobble content | 0.04 | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Droughty | 0.86 |  |  | Rock fragments | 0.00 |
| Wauquie--------- | 35 | Fair |  | Poor |  | Poor |  |
|  |  | Organic matter content low | 0.12 | Slope | 0.00 | Rock fragments | 0.00 |
|  |  | Droughty <br> Cobble content | 0.34 0.80 | Cobble content | 0.07 | Hard to reclaim (rock fragments) Slope | 0.00 |
|  |  | Cobble content |  |  |  |  | 0.00 |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 |
| 141: |  |  |  |  |  |  |  |
| Capillo--------- | 35 | Fair |  | Poor |  | Fair | 0.01 |
|  |  | Too clayey | 0.02 | Low strength | 0.00 | Too clayey |  |
|  |  | Organic matter | 0.12 | Shrink-swell | 0.15 |  |  |
|  |  | Water erosion | 0.99 |  |  |  |  |
| Carjo----------- | 30 | \| Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Organic matter content low | 0.50 | Depth to bedrock | 0.00 | Depth to bedrock | 0.65 |
|  |  | Depth to bedrock | 0.65 | Shrink-swell | 0.12 | Slope | 0.96 |
|  |  | Droughty | 0.94 |  |  |  |  |
| Vamer------------ | 30 | \| Poor |  | Poor |  | Poor |  |
|  |  | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 | Slope | 0.00 |
|  |  | Droughty | 0.00 | Low strength | 0.00 | Depth to bedrock | 0.00 |
|  |  | Too clayey | 0.02 | Slope | 0.82 | Too clayey | 0.01 |
|  |  | Organic matter content low | 0.92 | Shrink-swell | 0.87 | Rock fragments | 0.93 |
|  |  | Water erosion | 0.99 |  |  |  |  |
| 142: |  |  |  |  |  |  |  |
| Pinavetes- | 85 | Poor |  | Good |  | Fair |  |
|  |  | Wind erosion | 0.00 |  |  | Too sandy | 0.08 |
|  |  | Too sandy | 0.08 |  |  |  |  |
|  |  | Droughty | 0.10 |  |  |  |  |
|  |  | Organic matter content low | 0.32 |  |  |  |  |
|  |  |  |  |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \mid \text { map } \\ \text { unit } \end{gathered}\right.$ | 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 |
| 151: |  |  |  |  |  |  |  |
|  | 45 | Wind erosion | 0.00 | Good |  | Too sandy | 0.00 |
|  |  | Too sandy | 0.00 |  |  |  |  |
|  |  | Organic matter content low Droughty | 0.12 |  |  |  |  |
| Fruitland------- | 40 | Fair <br> Organic matter content low | 0.12 | Good |  | Good |  |
|  |  |  |  |  |  |  |  |
| 170: |  |  |  |  |  |  |  |
| Sedillo--------- | 85 | Fair | 0.12 | Fair | 0.01 | Poor | 0.00 |
|  |  | Organic matter content low |  | Cobble content |  | Hard to reclaim (rock fragments) |  |
|  |  | Cobble content | 0.46 |  |  |  | 0.00 |
|  |  | Droughty | 0.77 |  |  |  |  |
|  |  | Carbonate content | 0.80 |  |  |  |  |
|  |  | No stoniness limitation | 0.99 |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Good |  |
| Oelop----------- | 85 | Fair <br> Organic matter content low <br> Water erosion | 0.12 | Low strength | 0.00 |  |  |
|  |  |  | 0.99 | Shrink-swell | 0.98 |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol <br> and soil name | Pct. <br> of <br> map <br> 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 |
| 201: |  |  |  |  |  |  |  |
| Lobat----------- | 45 | Fair |  | Poor |  | Poor |  |
|  |  | content low |  | Slope | 0.00 | Rock fragments | 0.00 |
|  |  | Too acid | 0.74 | Low strength | 0.22 | Slope | 0.00 |
|  |  | Too clayey | 0.99 | Shrink-swell | 0.87 | Too clayey | 0.680.92 |
|  |  |  |  |  |  | Hard to reclaim (rock fragments) |  |
| Abreu---------- | 40 | Fair |  | Poor |  | Poor |  |
|  |  | Organic matter <br> content low <br> Too acid | 0.12 | Slope | 0.00 | Slope | 0.00 |
|  |  |  | 0.74 | Shrink-swell | 0.92 | Rock fragments | 0.00 |
|  |  | Too clayey | 0.98 | Cobble content | 0.96 | Hard to reclaim (rock fragments) | 0.00 |
|  |  |  |  | Depth to bedrock | 0.99 | Too clayey | 0.57 |
| 203: |  |  |  |  |  |  |  |
| Nabor---------- | 55 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey Organic matter content low Water erosion | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  |  | 0.92 | Shrink-swell | 0.21 | Slope | 0.00 |
|  |  |  | 0.99 | Slope | 0.50 |  |  |
| Elbuck---------- | 30 | ```Fair Organic matter content low Too acid``` | $\left\lvert\, \begin{aligned} & 0.12 \\ & 0.84 \end{aligned}\right.$ | Good |  | Poor <br> Rock fragments |  |
|  |  |  |  |  |  |  | 0.00 |
|  |  |  |  |  |  | Slope | 0.16 |
|  |  |  |  |  |  | Hard to reclaim (rock fragments) | 0.39 |
|  |  |  |  |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | $\begin{array}{\|c} \text { Pct. } \\ \left\lvert\, \begin{array}{c} \text { of } \\ \text { map } \\ \text { unit } \end{array}\right. \end{array}$ | 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 |
| $206:$ |  |  |  |  |  |  |  |
| Angostura-- | 60 | Stone content | 0.40 | Slope | 0.00 | Slope | 0.00 |
|  |  | Organic matter content low | 10.82 | Stone content | 10.52 | Rock fragments | 10.00 |
|  |  | Droughty | 10.98 | Cobble content | 0.53 | Hard to reclaim (rock fragments) | 10.05 |
| Gromes---------- | 25 | Fair |  | Fair |  | Poor |  |
|  |  | Organic matter content low | 0.82 | Cobble content | 0.13 | Slope | 10.00 |
|  |  | Cobble content | 10.90 | Slope | 0.50 | Rock fragments | 10.00 |
|  |  | Too acid | 10.99 | Shrink-swell | 10.87 | Hard to reclaim (rock fragments) | 10.00 |
| 207: |  |  |  |  |  |  |  |
| Gromes---------- | 65 | Fair |  | Poor |  | Poor |  |
|  |  | Organic matter content low | 0.82 | Slope | 10.00 | Slope | 10.00 |
|  |  | Cobble content | 0.91 | Cobble content | 0.15 | Hard to reclaim (rock fragments) | 10.00 |
|  |  | Too acid | 0.99 | Shrink-swell | 0.89 | Rock fragments | 10.00 |
| Rock outcrop---- | 20 | Not rated |  | Not rated |  | Not rated |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct. <br> 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 |
| 208: |  |  |  |  |  |  |  |
| Ess------------- | 45 | Fair |  | Fair |  | Poor |  |
|  |  | Cobble content | 0.98 | Cobble content | 0.43 | Rock fragments | 0.00 |
|  |  | Droughty | 0.98 | Shrink-swell | 0.99 | Hard to reclaim | 0.00 |
|  |  |  |  |  |  | Slope | 0.96 |
| Croftshaw------- | 35 | Fair |  | Poor |  | Fair |  |
|  |  | Too acid | 0.84 | Low strength | 0.00 | Slope | 0.37 |
|  |  | Organic matter content low | 0.98 | Shrink-swell | 0.87 | Rock fragments | 0.41 |
|  |  | Too clayey | 0.98 |  |  | Too clayey | 0.74 |
|  |  | Water erosion | 0.99 |  |  |  |  |
| 209 : |  |  |  |  |  |  |  |
| Crubas | 40 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Organic matter content low | 0.12 | Wetness depth | 0.00 | Wetness depth | 0.00 |
|  |  | Too acid | 0.74 | Shrink-swell | 0.25 | Hard to reclaim (rock fragments) | 0.54 |
| Bywell---------- | 30 | Fair |  | Fair |  | Poor |  |
|  |  | Droughty | 0.08 | Wetness depth | 0.04 | Rock fragments | 0.00 |
|  |  | Organic matter content low | 0.12 | Cobble content | 0.68 | Wetness depth | 0.04 |
|  |  | Water erosion | 0.90 |  |  |  |  |
|  |  | Too acid | 0.95 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 : |  |  |  |  |  |  |  |
| Quimera--------- | 60 | Poor |  | Poor |  | Poor |  |
|  |  | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 | Slope | 0.00 |
|  |  | Droughty | 0.00 | Slope | 0.00 | Depth to bedrock | 0.00 |
|  |  | Too clayey | 0.12 | Low strength | 0.00 | Too clayey | 0.07 |
|  |  | Organic matter content low | 0.12 | Shrink-swell | 0.70 | Rock fragments | 0.88 |
| Vamer----------- | 25 | Poor |  | Poor |  | Poor |  |
|  |  | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 |
|  |  | Droughty | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Too clayey | 0.00 | Slope | 0.08 | Slope | 0.00 |
|  |  | Organic matter content low Water erosion | 0.929 | Shrink-swell | 0.87 | Rock fragments | 0.74 |
| 215: |  |  |  |  |  |  |  |
| Saragote------- | 45 | Fair Too clayey |  | Poor |  | Poor |  |
|  |  |  | 0.02 | Low strength | 0.00 | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Organic matter content low | 0.50 | Cobble content | 0.12 | Rock fragments | 0.00 |
|  |  | Cobble content | 10.74 | Shrink-swell Wetness depth | 10.12 | Too clayey <br> Wetness depth | $\begin{aligned} & 0.01 \\ & \mid 0.98 \end{aligned}$ |
| Ess------------- | 35 | Fair Cobble content Droughty |  | Fair Cobble content Shrink-swell |  | Poor |  |
|  |  |  | 0.97 |  | 0.38 | Rock fragments | 0.00 |
|  |  |  | 0.98 |  | 0.99 | Hard to reclaim (rock fragments) | 0.00 |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol <br> 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 |
| 216: |  |  |  |  |  |  |  |
| Angostura------- | 85 | Fair |  | Poor |  | Poor |  |
|  |  | Stone content | 0.07 | Slope | 0.00 | Slope | 0.00 |
|  |  | Droughty | 0.12 | Stone content | 0.06 | Rock fragments | 0.00 |
|  |  | Organic matter content low | $0.32$ | Cobble content | 0.38 | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Cobble content |  |  |  |  |  |
| 220: |  |  |  |  |  |  |  |
| Rock outcrop- | 40 | Not rated |  | Not rated |  | Not rated |  |
| Vessilla-------- | 30 | \| Poor |  | Poor |  | Poor |  |
|  |  | Depth to bedrock | 0.00 | Slope | 0.00 | Slope | 0.00 |
|  |  | Droughty | $0.00$ | Depth to bedrock | 0.00 | Depth to bedrock | 0.00 |
|  |  | Organic matter content low | $0.12$ |  |  | Rock fragments | 0.95 |
| Menefee--------- | 20 | \| Poor |  | Poor |  | \| Poor |  |
|  |  | Droughty |  | Depth to bedrock |  | Depth to bedrock | 0.00 |
|  |  | \| Depth to bedrock | $0.00$ | slope | $0.00$ | slope | 0.00 |
|  |  | Organic matter content low | 0.50 0.88 |  |  | Too clayey | 0.57 0.88 |
|  |  | Too clayey | 0.88 |  |  | Rock fragments | 0.88 |
| 228: |  |  |  |  |  |  |  |
| Suposo---------- | 50 | Poor Too clayey |  |  |  |  | 0.00 |
|  |  |  | 0.00 | Low strength Shrink-swell | $\left\lvert\, \begin{aligned} & 0.00 \\ & \mid 0.12 \end{aligned}\right.$ | Too clayey |  |
|  |  | Organic matter content low | 0.50 |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> 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 |
| $248:$ |  |  |  |  |  |  |  |
|  |  | Too clayey | 0.02 | Low strength | 0.00 | Too clayey | 0.01 |
|  |  | Organic matter content low | 0.12 | Shrink-swell | 0.12 |  |  |
| 249 : |  |  |  |  |  |  |  |
| Losmarios------- | 85 | Poor |  | Poor |  | Poor |  |
|  |  | Too clayey | 0.00 | Low strength | 0.00 | Too clayey | 0.00 |
|  |  | Organic matter content low | 0.12 | Slope | 0.08 | Slope | 0.00 |
|  |  |  |  | Shrink-swell | 0.12 | Rock fragments | 0.92 |
| 302: |  |  |  |  |  |  |  |
| Puye----------- | 85 | Poor |  | Poor | 0.00 | Poor |  |
|  |  | Droughty | 0.00 | Depth to cemented pan |  | Rock fragments | 0.00 |
|  |  | Depth to cemented | 0.00 |  |  | Depth to cemented | 0.00 |
|  |  | Organic matter content low | 0.32 |  |  |  | 0.96 |
| 401: |  |  |  |  |  |  |  |
| Chiminet-------- | 60 | Poor |  | Poor |  | Poor |  |
|  |  | Droughty | 0.00 | Depth to bedrock | 0.00 | Slope | 0.00 |
|  |  | Depth to bedrock | 0.00 | Slope | 0.08 | Rock fragments | 0.00 |
|  |  | Organic matter content low Too acid | $\left\lvert\, \begin{aligned} & 0.02 \\ & 0.74\end{aligned}\right.$ |  |  | Depth to bedrock | 0.00 |
|  |  |  |  |  |  |  |  |

Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued


Table 15.--Source of reclamation material, roadfill, and topsoil--Continued

| Map symbol and soil name | Pct. <br> 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 |
| 802: |  |  |  |  |  |  |  |
| Redondo-- | 85 | Fair |  | Fair |  | Poor |  |
|  |  | Organic matter content low | 0.12 | Cobble content | 0.67 | Hard to reclaim (rock fragments) | 0.00 |
|  |  | Too acid | 0.74 |  |  | Rock fragments | 0.00 |
|  |  | Cobble content | 0.98 |  |  | Slope | 0.00 |
|  |  | Droughty | 0.99 |  |  |  |  |
| 803: |  |  |  |  |  |  |  |
| Rusbach- | 85 | \|Fair |  |  |  |  |  |
|  |  | Organic matter content low | 0.12 | Slope | 0.00 | Slope | 0.00 |
|  |  | Droughty | 0.59 | Cobble content | 0.37 | Hard to reclaim | 0.00 |
|  |  |  |  |  |  | (rock fragments) |  |
|  |  | Too acid | 0.74 |  |  | Rock fragments | 0.00 |
|  |  | Cobble content | 0.85 |  |  |  |  |
| DAM: |  |  |  |  |  |  |  |
| Dam- | 100 | Not rated |  | Not rated |  | Not rated |  |
| W : |  |  |  |  |  |  |  |
| Water- | 100 | Not rated |  | Not rated |  | Not rated |  |

(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. <br> of <br> map <br> unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 9 : Pinavetes-- | 50 | Very limited Seepage Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.68 \end{aligned}\right.$ | Somewhat limited Seepage | 0.12 | \|Very limited Depth to water | 1.00 |
| Florita------- | 40 | Very limited Seepage Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.08 \end{aligned}\right.$ | Somewhat limited Piping Seepage | $\left\lvert\, \begin{aligned} & 0.22 \\ & 0.06 \end{aligned}\right.$ | Very limited Depth to water | 1.00 |
| $\begin{aligned} & \text { 10: } \\ & \text { Sparank } \end{aligned}$ | 55 | Not limited |  | Very limited Hard to pack | 1.00 | Very limited Depth to water | 1.00 |
| San Mateo-- | 30 | Somewhat limited Seepage | 0.04 | Very limited Piping | 1.00 | Very limited Depth to water | 1.00 |
| ```11: Fruitland--``` | 85 | Very limited Seepage | 11.00 | Somewhat limited Seepage | 0.04 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 12: \\ & \text { Pinavetes. } \end{aligned}$ | 85 | Very limited Seepage | 11.00 | Somewhat limited Seepage | 0.12 | Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \end{gathered}\right.$ | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 18: |  |  |  |  |  |  |  |
| Abiquiu-------- | 50 | Very limited Seepage | 1.00 | Somewhat limited <br> Depth to saturated zone | 0.43 | Very limited Cutbanks cave | 1.00 |
|  |  |  |  | Large stones content | 0.28 | Large stones content | 0.28 |
|  |  |  |  | Seepage | 0.12 | Depth to saturated zone | 0.25 |
| Peralta--------- | 40 | Somewhat limited Seepage | 0.72 | Somewhat limited <br> Depth to saturated zone Seepage Piping | 0.86 | Very limited Cutbanks cave | 1.00 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  | 0.19 | Slow refill |  |
|  |  |  |  |  | 0.10 | Salinity and | 0.22 |
|  |  |  |  |  |  | Depth to saturated zone | 0.06 |
| 20 : |  |  |  |  |  |  |  |
| Menefee | 35 | Very limitedSlope | 1.00 | Very limited | 1.00 | Very limited |  |
|  |  |  |  | Thin layer |  | Depth to water | 1.00 |
|  |  | Depth to bedrock | 0.84 |  |  |  |  |
| Vessilla-------- | 30 | ```Very limited Depth to bedrock Slope Seepage``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \\ & 0.53 \end{aligned}\right.$ | Very limited Thin layer Seepage | $\begin{aligned} & 1.00 \\ & 0.04 \end{aligned}$ | Very limited Depth to water |  |
|  |  |  |  |  |  |  | 1.00 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Rock outcrop-------- | 15 | Not rated |  | Not rated |  | Not rated |  |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 31: |  |  |  |  |  |  |  |
| Gobernador- | 50 | Not limited |  | Very limited Hard to pack Salinity | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ | Very limited Depth to water | 1.00 |
| Orlie-- | 40 | ```Somewhat limited Slope Seepage``` | $\begin{array}{\|l} 0.32 \\ 0.04 \end{array}$ | Not limited |  | Very limited Depth to water | 1.00 |
| 34: |  |  |  |  |  |  |  |
| Alcalde-- | 85 | Not limited |  | Very limited Hard to pack Salinity | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ | Very limited Depth to water | 1.00 |
| 39: |  |  |  |  |  |  |  |
| Fruitland- | 85 | Very limited Seepage Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.08 \end{aligned}\right.$ | Somewhat limited Seepage | 0.04 | Very limited Depth to water | 1.00 |
| 40: |  |  |  |  |  |  |  |
| Pinitos-- | 40 | Very limited Seepage Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.68 \end{aligned}\right.$ | Not limited |  | Very limited Depth to water | 1.00 |
| Menefee----- | 20 | $\begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Depth to bedrock } \end{aligned}$ | $\begin{array}{\|l} 1.00 \\ 0.84 \end{array}$ | Very limited Thin layer | 1.00 | Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct <br> of map unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 40: |  |  |  |  |  |  |  |
| Vessilla-------- | 20 | Very limited |  | Very limited |  | Very limited Depth to water | 1.00 |
|  |  | slope | 1.00 | Seepage | 0.01 |  |  |
|  |  | Seepage | 0.53 |  |  |  |  |
| 42: |  |  |  |  |  |  |  |
| Walrees--------- | 45 | Very limited Seepage |  | Somewhat limited |  | Very limited |  |
|  |  |  | 1.00 | Depth to saturated zone | 0.09 | Cutbanks cave | 1.00 |
|  |  |  |  | Seepage | 0.05 | Depth to | 0.54 |
|  |  |  |  |  |  | Salinity and saturated zone | 0.01 |
| Abiquiu--------- | 40 | Very limited Seepage | 1.00 | Somewhat limited Depth to saturated zone Seepage |  | Very limited Cutbanks cave |  |
|  |  |  |  |  | 0.43 |  | 1.00 |
|  |  |  |  |  | 0.12 | Depth to | 0.25 |
| Stout | 45 | Very limited Depth to bedrock Slope |  | Very limited |  | Very limited Depth to water | 1.00 |
|  |  |  | 1.00 | Thin layer | 1.00 |  |  |
|  |  | slope | 1.00 | Organic matter content | 1.00 |  |  |
|  |  | Seepage | 0.53 | Seepage | 0.03 |  |  |

Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | $\left\|\begin{array}{c} \text { Pct. } \\ \text { of } \\ \text { map } \\ \text { unit } \end{array}\right\|$ | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 50: <br> Kunz | 40 | $\left\lvert\, \begin{aligned} & \text { Very limited } \\ & \text { Slope } \\ & \text { Seepage } \end{aligned}\right.$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.04 \end{aligned}\right.$ | Somewhat limited Seepage | 0.03 | Very limited Depth to water | 1.00 |
| 54 : Capillo | 90 | Somewhat limited Slope | 0.08 | Somewhat limited Hard to pack | 0.18 | Very limited Depth to water | 1.00 |
| 60 : Sparham- | 85 | Very limited Seepage | 1.00 | Very limited Hard to pack Seepage | 1.00 0.03 | Somewhat limited Depth to saturated zone Cutbanks cave Salinity and saturated zone | $\left\lvert\, \begin{aligned} & 0.96 \\ & 0.10 \\ & 0.06 \end{aligned}\right.$ |
| 61: <br> Colomex | 85 | \|Very limited Seepage | 1.00 | Somewhat limited Seepage Large stones content | $\left\lvert\, \begin{aligned} & 0.11 \\ & 0.05 \end{aligned}\right.$ | Very limited Depth to water | 1.00 |
| 64 : <br> Dula | 90 | \|Very limited Seepage | 1.00 | ```Very limited Depth to saturated zone Seepage``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.50 \end{aligned}\right.$ | Very limited Cutbanks cave | 1.00 |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued

| Map symbol <br> and soil name | Pct. <br> of map unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 80: <br> Nalivag- | 35 | $\begin{array}{\|l} \text { Somewhat limited } \\ \text { Slope } \\ \text { Seepage } \end{array}$ | $\left\lvert\, \begin{aligned} & 0.32 \\ & \mid 0.04 \end{aligned}\right.$ | Somewhat limited Piping | 0.10 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & \text { 102: } \\ & \text { Menefee-- } \end{aligned}$ | 40 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Depth to bedrock } \end{array}$ | $\text { \| } 1.00$ | Very limited Thin layer | 1.00 | Very limited Depth to water | 1.00 |
| Nalivag- | 40 | Very limited Slope Seepage | $\left\lvert\, \begin{aligned} & 1.00 \\ & \mid 0.04 \end{aligned}\right.$ | Somewhat limited Piping | 0.10 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & \text { 103: } \\ & \text { Orlie- } \end{aligned}$ | 80 | Somewhat limited Slope Seepage | $\left\lvert\, \begin{aligned} & 0.32 \\ & 10.04 \end{aligned}\right.$ | Not limited |  | \|Very limited Depth to water | 1.00 |
| $\begin{aligned} & \text { 106: } \\ & \text { Amal-- } \end{aligned}$ | 85 | $\begin{array}{\|l} \text { Somewhat limited } \\ \text { Slope } \\ \text { Seepage } \end{array}$ | $\left\lvert\, \begin{aligned} & 0.32 \\ & 10.04 \end{aligned}\right.$ | Not limited |  | Very limited Depth to water | 1.00 |
| $107 \text { : }$ <br> Berryman | 55 | Somewhat limited Slope | 0.68 | Somewhat limited Piping | 0.01 | Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | $\left\lvert\, \begin{gathered} \text { Pct. } \\ \text { of } \\ \text { of } \\ \text { map } \end{gathered}\right.$ | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $\begin{aligned} & \text { 110: } \\ & \text { Orlie- } \end{aligned}$ | 20 | $\begin{array}{\|l} \text { Somewhat limited } \\ \text { Slope } \\ \text { Seepage } \end{array}$ | $\left\lvert\, \begin{aligned} & 0.32 \\ & 0.04 \end{aligned}\right.$ | Not limited |  | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 113: \\ & \text { Teromote-- } \end{aligned}$ | 55 | Somewhat limited Slope Seepage | $\begin{array}{\|l} 0.32 \\ 0.04 \end{array}$ | Somewhat limited Piping | 0.10 | Very limited Depth to water | 1.00 |
| Ruson-- | 25 | Not limited |  | Somewhat limited Hard to pack | 0.72 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 115 \text { : } \\ & \text { Menefee- } \end{aligned}$ | 80 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Depth to bedrock } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.80 \end{aligned}\right.$ | Very limited Thin layer | 1.00 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 117: \\ & \text { Chamita-- } \end{aligned}$ | 85 | Very limited Seepage | 1.00 | Very limited Depth to saturated zone Piping Seepage | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.48 \\ & 0.04 \end{aligned}\right.$ | Very limited Cutbanks cave | 1.00 |
| $118 \text { : }$ <br> Hesperus | 35 | Somewhat limited Seepage | 0.54 | Somewhat limited Piping | 0.13 | Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct. <br> of map unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | \|Value |
| ```118: Pastorius``` | 25 | Somewhat limited Seepage | 0.72 | ```Somewhat limited Piping Large stones content``` | $\left\lvert\, \begin{aligned} & 0.35 \\ & 0.18 \end{aligned}\right.$ | Very limited Depth to water | 1.00 |
| Chamita- | 20 | Somewhat limited Seepage | 0.54 | ```Very limited Depth to saturated zone Piping``` | 1.00 0.07 | Somewhat limited <br> Slow refill <br> Cutbanks cave | 0.46 |
| $\begin{aligned} & 119 \text { : } \\ & \text { Roques } \end{aligned}$ | 45 | \|Somewhat limited | 0.32 | Somewhat limited Hard to pack | 0.86 | Very limited Depth to water | 1.00 |
| Nusmag- | 35 | \| Not limited |  | Somewhat limited Hard to pack | 0.79 | ```\|Very limited Slow refill Depth to saturated zone Cutbanks cave``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.99 \\ & 0.10 \end{aligned}\right.$ |
| $\begin{aligned} & 125: \\ & \text { Hogg-- } \end{aligned}$ | 55 | \|Somewhat limited | 0.68 | Somewhat limited Hard to pack | 0.27 | \|Very limited Depth to water | 1.00 |
| Mara- | 30 | $\begin{array}{\|l} \text { Somewhat limited } \\ \text { Slope } \\ \text { Seepage } \end{array}$ | $\left\lvert\, \begin{aligned} & 0.92 \\ & \mid 0.04 \end{aligned}\right.$ | Not limited |  | \|Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 140: |  |  |  |  |  |  |  |
| Espiritu-------- | 45 | Very limited Seepage | 11.00 | Somewhat limited Large stones content | 0.28 | Very limited Depth to water | 1.00 |
|  |  | Slope | 1.00 | Seepage | 0.03 |  |  |
| Wauquie--------- | 35 | \|Very limited Seepage | 1.00 | Somewhat limited Large stones content | 0.37 | Very limited Depth to water | 1.00 |
|  |  | Slope | 1.00 |  |  |  |  |
| 141: |  |  |  |  |  |  |  |
| Capillo--------- | 35 | $\begin{aligned} & \text { Somewhat limited } \\ & \text { Slope } \end{aligned}$ | 0.92 | Not limited |  | Very limited Depth to water | 1.00 |
| Carjo----------- | 30 | Very limited |  | Somewhat limited |  | Very limited |  |
|  |  | slope | 1.00 | Thin layer | 0.83 | Depth to water | 1.00 |
|  |  | Depth to bedrock | 0.83 | Hard to pack | 0.40 |  |  |
|  |  | Seepage | 0.53 |  |  |  |  |
| Vamer----------- | 30 | Very limited |  | Very limited |  | Very limited |  |
|  |  | slope | 1.00 | Thin layer | 1.00 | Depth to water | 1.00 |
|  |  | Depth to bedrock | 1.00 |  |  |  |  |
|  |  | Seepage | 0.53 |  |  |  |  |
| 142: |  |  |  |  |  |  |  |
| Pinavetes------- | 85 | Very limited Seepage Slope |  | Somewhat limited Seepage | 0.12 | Very limited Depth to water | 1.00 |
|  |  |  | 1.00 |  |  |  |  |
|  |  |  | 11.00 |  |  |  |  |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct. of map unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $\begin{aligned} & \text { 148: } \\ & \text { Chita-- } \end{aligned}$ | 85 | Somewhat limited Seepage | 0.72 | Somewhat limited Piping | 0.08 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 149: \\ & \text { Yarts-- } \end{aligned}$ | 80 | Very limited Seepage | 1.00 | Somewhat limited Seepage | 0.03 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & \text { 151: } \\ & \text { Razito--- } \end{aligned}$ | 45 | Very limited Seepage | 1.00 | Somewhat limited Seepage | 0.10 | Very limited Depth to water | 1.00 |
| Fruitland--- | 40 | Very limited Seepage | 1.00 | Somewhat limited Seepage | 0.07 | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 170 \text { : } \\ & \text { Sedillo } \end{aligned}$ | 85 | Very limited Seepage | 1.00 | Somewhat limited <br> Large stones content Seepage | $\left\{\begin{array}{l} 0.33 \\ 0.04 \end{array}\right.$ | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 173 \text { : } \\ & \text { Oelop-- } \end{aligned}$ | 85 | Very limited Seepage | 11.00 | Somewhat limited Piping Seepage | $\begin{aligned} & 0.32 \\ & 0.04 \end{aligned}$ | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 180: \\ & \text { Oelop-- } \end{aligned}$ | 90 | Somewhat limited Seepage | 0.04 | Somewhat limited Piping | 0.01 | Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct. <br> of map unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $203:$ |  |  |  |  |  |  |  |
| Elbuck | 30 | Very limited Slope Seepage | 1.00 <br> 0.72 | Not limited |  | Very limited Depth to water | 11.00 |
|  |  |  |  |  |  |  |  |
| 206: |  |  |  |  |  |  |  |
| Angostura------- | 60 | Very limited slope | 11.00 | Somewhat limited Large stones content | 0.30 | Very limited Depth to water | 1.00 |
|  |  | Seepage | 0.72 |  |  |  |  |
| Gromes---------- | 25 | Very limited Slope | \| 1.00 | Somewhat limited | 0.19 | Very limited Depth to water | 1.00 |
|  |  |  |  | Large stones content |  |  |  |
|  |  | Seepage | 0.04 |  |  |  |  |
| 207: |  |  |  |  |  |  |  |
|  | 65 | Very limited Slope | 11.00 | Somewhat limited Large stones content | 0.14 | Very limited Depth to water | 1.00 |
|  |  |  |  |  |  |  |  |
|  |  | Seepage | 0.04 |  |  |  |  |
| Rock outcrop------- | 20 | Not rated |  | Not rated |  | Not rated |  |
| 208: |  |  |  |  |  |  |  |
|  | 45 | Very limited Slope | 1.00 | Somewhat limited Large stones content | 0.02 | Very limited Depth to water | 1.00 |
|  |  |  |  |  |  |  |  |
|  |  | Seepage | 0.72 | Seepage | 0.01 |  |  |

Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $208 \text { : }$ <br> Croftshaw | 35 | $\begin{array}{\|l} \text { Very limited } \\ \text { Slope } \\ \text { Seepage } \end{array}$ | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.04 \end{aligned}\right.$ | Not limited |  | \|Very limited Depth to water | 1.00 |
| $209:$ <br> Crubas | 40 | Not limited |  | ```Very limited Depth to saturated zone Hard to pack``` | 1.00 | ```\| Very limited ``` | 1.00 0.96 |
| Bywell | 30 | Very limited Seepage | 1.00 | ```\| Very limited Depth to saturated zone Seepage``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.06 \end{aligned}\right.$ | Somewhat limited Cutbanks cave | 0.10 |
| Croftshaw--- | 20 | Very limited Seepage Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | Somewhat limited Seepage | 0.04 | $\begin{aligned} & \text { Very limited } \\ & \text { Depth to water } \end{aligned}$ | 1.00 |
| $210:$ <br> Rock outcrop | 60 | Not rated |  | Not rated |  | Not rated |  |
| Bracos-- | 30 | ```Very limited Seepage Slope Depth to bedrock``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \\ & 0.81 \end{aligned}\right.$ | Very limited <br> Large stones content <br> Thin layer <br> Seepage | $\left\lvert\, \begin{aligned} & 1.00 \\ & 0.81 \\ & 0.04 \end{aligned}\right.$ | \|Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued

| Map symbol <br> and soil name | Pct. of map unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| $228 \text { : }$ <br> Brycan | 35 | Somewhat limited Seepage | 0.72 | Somewhat limited Piping | 0.04 | Very limited Depth to water | 1.00 |
| Badland | 90 | Very limited Depth to bedrock Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | Not rated |  | Not rated |  |
| ```240: Riverwash, gravelly-``` | 100 | Very limited Seepage | 1.00 | ```Very limited Depth to saturated zone Seepage``` | 1.00 0.70 | Very limited Cutbanks cave | 1.00 |
| $\begin{aligned} & \text { 241: } \\ & \text { Florita- } \end{aligned}$ | 55 | Very limited Seepage Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00 \end{aligned}\right.$ | $\begin{aligned} & \text { Somewhat limited } \\ & \text { Piping } \\ & \text { Seepage } \end{aligned}$ | $\left\lvert\, \begin{aligned} & 0.22 \\ & 0.04 \end{aligned}\right.$ | Very limited Depth to water | 1.00 |
| Rock outcrop------- | 25 | Not rated |  | Not rated |  | Not rated |  |
| Tinaja | 50 | Very limited Seepage Slope | 1.00 1.00 | Somewhat limited <br> Large stones content <br> Seepage | 0.93 0.04 | Very limited Depth to water | 1.00 |
| Rock outcrop------- | 30 | Not rated |  | Not rated |  | Not rated |  |

Table 16.--Ponds and embankments--Continued

| Map symbol and soil name | Pct. <br> of <br> map <br> unit | Pond reservoir areas |  | Embankments, dikes, and levees |  | Aquifer-fed excavated ponds |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Rating class and limiting features | \|Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 243: <br> Penistaja | 85 | Very limited Seepage Slope | $\left\lvert\, \begin{aligned} & 1.00 \\ & \mid 0.32 \end{aligned}\right.$ | Not limited |  | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 244: \\ & \text { Scholle-- } \end{aligned}$ | 60 | Somewhat limited Seepage | 0.72 | Not limited |  | Very limited Depth to water | 1.00 |
| Silver--- | 30 | Somewhat limited Seepage | 0.72 | Not limited |  | Very limited Depth to water | 1.00 |
| $\begin{aligned} & \text { 245: } \\ & \text { Maia--- } \end{aligned}$ | 65 | Very limited Seepage | 1.00 | Not limited |  | Very limited Depth to water | 1.00 |
| Manzano-- | 20 | Very limited Seepage | 1.00 | Somewhat limited Piping Seepage | $\begin{aligned} & 0.75 \\ & 0.10 \end{aligned}$ | Very limited Depth to water | 1.00 |
| $\begin{aligned} & 246 \text { : } \\ & \text { Pena- } \end{aligned}$ | 85 | ```Very limited Seepage Slope``` | $\left\lvert\, \begin{aligned} & 1.00 \\ & 1.00\end{aligned}\right.$ | Somewhat limited <br> Large stones content <br> Seepage | 0.58 0.04 | Very limited Depth to water | 1.00 |
| $247 \text { : }$ <br> Wenota | 85 | Somewhat limited Slope | 0.08 | Not limited |  | Very limited Depth to water | 1.00 |

Table 16.--Ponds and embankments--Continued


Table 16.--Ponds and embankments--Continued


(Absence of an entry indicates that the data were not estimated.)

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | Liquidlimit | Plasindex |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{aligned} & \hline>10 \\ & \text { inches } \end{aligned}$ | $\begin{gathered} 3-10 \\ \text { inches } \end{gathered}$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| $9 \text { : }$ <br> Pinavetes | In. |  |  |  | Pct. | Pct. |  |  |  |  | Pct. |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 | Loamy sand | SM | A-2 | 0 | 0 | 100 | 100 | 77-84 | 19-26 | 0-24 | NP-6 |
|  | 3-60 | Loamy sand | SM | A-2 | 0 | 0 | 100 | 100 | 77-85 | 17-25 | 18-28 | 3-10 |
| Florita------- | 0-2 | Sandy loam | SC-SM | A-4 | 0 | 0 | 100 | 100 | 74-79 | 36-41 | 26-33 | 9-13 |
|  | 2-6 | Sandy loam | SC-SM | A-4 | 0 | 0 | 100 | 100 | 74-79 | \| 36-41 | 20-27 | 6-10 |
|  | 6-24 | Coarse sandy loam | \| SM | A-2 | 0 | 0 | 100 | 100 | 60-65 | 34-39 | 16-23 | 2-6 |
|  | 24-60 | Sandy loam | \| SC-SM | A-4 |  |  | 100 |  | 74-79 | 36-41 | 20-27 | $6-10$ |
| 10: |  |  |  |  |  |  |  |  |  |  |  |  |
| Sparank------- | 0-2 | Silt loam | CL | A-6 | 0 | 0 | 100 | 100 | 91-98 | 78-85 | 31-41 | 13-19 |
|  | 2-60 | Clay | CH, CL | A-7 | 0 | 0 | 95-100 | 84-100 | 73-100 | 58-84 | 45-61 | 25-37 |
| San Mateo----- |  | Silt loam \| |  |  |  |  |  | 100 | 89-99 | \| 73-83 | 26-37 | 9-17 |
|  | $2-60$ | Stratified sandy loam to clay loam | CL | A-6 | 0 | 0 | 90-100 | 75-100 | 67-100 | 59-95 | 29-47 | 12-25 |
| 11:Fruitland |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-2 | Sandy loam | SC-SM | A-4 | 0 | 0 | 100 | 100 | 74-79 | 36-41 | 17-24 | 2-6 |
|  | 2-60 | Fine sandy loam, sandy loam | SC-SM | A-2, A-4 | 0 | 0 | 90-100 | 76-100 | 55-85 | 26-48 | 16-30 | 2-12 |
| $\begin{aligned} & \text { 12: } \\ & \text { Pinavetes } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-4 | Loamy sand | SM | A-2 | 0 | 0 | 100 | 100 | 77-84 | 19-26 | 0-24 | NP-6 |
|  | 4-60 | Loamy sand | SM | A-2 | 0 | 0 | 100 | 100 | 77-85 | 17-25 | 18-28 | 3-10 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | \|Liquid <br> limit | Plasticity index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{gathered} \hline>10 \\ \text { inches } \end{gathered}$ | $\begin{gathered} 3-10 \\ \text { inches } \end{gathered}$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| ```40: Vessilla``` | In. | Fine sandy loam <br> Sandy loam, fine sandy loam | $\begin{array}{\|l} \mid S C-S M \\ \mid S C-S M \end{array}$ | $\begin{array}{ll} A-2, & A-4 \\ A-2, & A-4 \end{array}$ | Pct. | Pct. |  |  |  |  | Pct. |  |
|  | 0-2 |  |  |  | 0 | 0-10 | 90-100\| | 75-100 | 66-98 | 29-49 | 21-32 | 6-13 |
|  | 2-10 |  |  |  | 0 | 0-9 | 90-100 | 75-100 | 66-98 | 28-47 | 18-30 | 4-12 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 10-60 | Bedrock |  |  | --- | --- | --- | - | -- | -- | -- | --- |
| 42 : |  |  |  |  |  |  |  |  |  |  |  |  |
| Walrees-------- | 0-4 | Clay loam | CL | A-6 | 0 | 0 | 100 | 100 | 87-94 | 67-74 | 39-49 | 19-25 |
|  | 4-23 | Silty clay loam | CL | A-6 | 0 | 0 | 100 | 100 | 80-97 | 61-78 | 28-45 | 12-25 |
|  | 23-60 | Stratified gravelly sand to cobbly sand | GW, GW-GM | A-1 | 0 | 12-37 | 45-74 | 34-74 | 24-65 | 2-16 | 0-28 | NP-10 |
| Abiquiu-------- | 0-3 | Fine sandy loam | \|SC-SM, SM | A-4A-2 | 0 | 0 | 100 | 100 | 92-97 | 43-48 | 24-33 | 9-13 |
|  | 3-17 | Fine sandy loam, loamy sand, sand |  |  | 0 | 0 | 100 | 100 | 75-85 | 16-26 | 16-27 | 2-10 |
|  | 17-60 | Stratified extremely cobbly coarse sand to extremely gravelly sand | GW, GW-GM | A-1 | 0 | 16-45 | 44-81 | 25-81 | 12-42 | 2-11 | 0-20 | NP-4 |
| 50 :Stout | 0-2 | Slightly decomposed plant material |  |  | 0 | 0 | --- | --- | --- | --- | --- | --- |
|  |  |  | PT | A-8 |  |  |  |  |  |  |  |  |
|  | 2-5 | Sandy loam | SC-SM | A-4 | 0 | 0-15 | 94-100\| | 83-100 | 59-81 | 26-41 | 20-32 | 6-13 |
|  | 5-14 | Sandy loam <br> Bedrock |  |  | 0 | 0 | 83-100 | 83-100 | 60-82 | 29-45 | 20-32 | 6-13 |
|  | 14-60 |  |  |  | --- | --- | --- | --- | --- | --- | --- | --- |
| Kunz | 0-3 | Sandy loam \|Sandy clay loam | $\begin{aligned} & \mid S C-S M \\ & \mid C L \end{aligned}$ | $\left\lvert\, \begin{aligned} & \text { A-4 } \\ & \text { A- } \end{aligned}\right.$ | 0 | 0-6 | 94-100 | 81-100 | 58-82 | 28-45 | 22-35 | 6-13 |
|  | 3-60 |  |  |  | 0 | 0-5 | 94-100 | 83-100\| | 68-92 | 37-55 | 32-43 | 13-21 |

Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | Liquid <br> limit | $\begin{aligned} & \text { Plas- } \\ & \text { ticity } \\ & \text { index } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{aligned} & \hline>10 \\ & \text { inches } \end{aligned}$ | $\left\lvert\, \begin{gathered} 3-10 \\ \text { inches } \end{gathered}\right.$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| 54 : Capillo | In. |  |  |  | Pct. | Pct. |  |  |  |  | Pct. |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-4 | Silt loam | CL | A-4, A-6 | 0 | 0 | 100 | 100 | 89-99 | 73-83 | 27-39 | 9-17 |
|  | 4-11 | Silt loam, loam | \| CL | A-4, A-6 | 0 | 0 | 100 | 100 | 94-100 | 78-93 | 26-41 | 9-21 |
|  | 11-16 | clay | \| CL | A-7 | 0 | 0 | 100 | 100 | 95-100 | \| 90-100 | 45-56 | 25-33 |
|  | $16-60$ | ```Clay, silty clay loam, clay loam``` |  |  | 0 | 0 | 100 | 100 | 88-98 | 70-80 | 45-56 | \| 25-33 |
| 60: |  |  |  |  |  |  |  |  |  |  |  |  |
| Sparham------ | 0-4 | Clay loam | CL | A-7 | 0 | 0 | 100 | 100 | 91-95 | 72-76 | 45-50 | 25-28 |
|  | 4-41 | Clay | \| CH, CL | A-7 | 0 | 0 | 100 | 100 | 90-100 | 73-83 | 49-61 | 29-37 |
|  | 41-54 | Sandy clay | \| CH, CL | A-7 | 0 | 0 | 100 | 100 | 80-90 | 52-62 | 49-61 | 29-37 |
|  | 54-60 | Sandy loam | \|SC-SM | A-2, A-4 | 0 | 0 | 100 | 100 | 72-82 | 35-45 | 20-32 | 6-13 |
| 61: ${ }_{\text {Colomex }}$ |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-6 | Gravelly silt loam | $\begin{aligned} & \text { CL-ML, GC-GM, } \\ & \text { SC-SM } \end{aligned}$ | A-4 | 0 | 0-18 | 65-80 | 46-80 | 40-78 | 32-64 | 22-35 | 6-13 |
|  | 6-12 | Gravelly sandy clay loam\| | GC, SC | A-2, A-6 | 0 | 0-11 | 65-82 | 43-82 | 35-75 | 19-44 | 30-41 | 13-21 |
|  | 12-34 | Extremely cobbly sandy clay loam, very cobbly sandy clay loam | \| GC | A-2 | 0 | 36-45 | 52-74 | 30-74 | 24-70 | 13-43 | 31-46 | 13-25 |
|  | 34-60 | very gravelly loamy sand\| | GM, SM | A-1 | 0 | 15-36 | 54-78 | 34-78 | 25-66 | 6-20 | 16-27 | 2-10 |
| 64 : |  |  |  |  |  |  |  |  |  |  |  |  |
| Dula---------- | 0-11 | Loam | \| CL | A-6 | 0 | 0 | 100 | 100 | 85-92 | \|62-69 | 31-41 | 11-17 |
|  | 11-28 | Loam | \| CL |  | 0 | 0 | 100 | 100 | 85-92 | 62-69 | 29-41 | 12-17 |
|  | 28-60 | Extremely gravelly coarse sand | \| GP | A-1 | 0 | 13-33 | 45-67 | 29-67 | 13-33 | 3-10 | 0-20 | NP-2 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | Liquid <br> limit | $\begin{array}{\|l} \text { Plas- } \\ \mid \text { ticity } \\ \text { index } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{array}{c\|} \hline>10 \\ \text { inches } \end{array}$ | $\begin{array}{\|c\|} 3-10 \\ \text { inches } \end{array}$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| $65:$ <br> Doslomas | In. | Loam <br> Clay, clay loam <br> Extremely cobbly coarse sand |  | Pct. |  | Pct. |  |  |  |  | Pct. |  |
|  | 0-7 |  |  | A-6 | 0 | 0 | 89-100 | 74-100 | 62-94 | 44-70 | 27-39 | 9-17 |
|  | 7-28 |  | CL | A-7 | 0 | 0 | 90-100 | 76-100 | \|66-100 | 51-82 | 39-55 | 21-32 |
|  | 28-60 |  | GW-GM | A-1 | 0 | 42-55 | 50-75 | 41-75 | 20-40 | 5-13 | 16-23 | 2-6 |
| 66 : |  |  |  |  |  |  |  |  |  |  |  |  |
| Encicado------ | 0-17 | Silty clay loam <br> Silty clay loam, clay <br> loam, clay <br> Extremely cobbly clay <br> loam, extremely cobbly <br> sandy clay loam | CL $\mathrm{CH}, \mathrm{CL}$ | $\left\lvert\, \begin{aligned} & \text { A-7 } \\ & \text { A-7 }\end{aligned}\right.$ | 00 | 0 | 100 | 100 | \|95-100 | 83-91 | 43-53 | 18-25 |
|  | 17-35 |  | CH, CL |  |  |  |  |  |  | 90-100\| | 45-62 |  |
|  | 35-60 |  | \| GC | A-2 | 0-6 | 43-60 | 34-72 | 20-72 | \| 18-72 | 16-63 | 39-51 | 21-29 |
| 69 : |  |  |  |  |  |  |  |  |  |  |  |  |
| Lindrith------ | 0-11 | $\begin{aligned} & \text { Silty clay loam } \\ & \text { Stratified loamy sand to } \\ & \text { sandy loam } \end{aligned}$ | $\begin{aligned} & \mid \mathrm{CL} \\ & \mid \mathrm{SC}-\mathrm{SM} \end{aligned}$ | $\left\lvert\, \begin{aligned} & A-6 \\ & A-2, A-4 \end{aligned}\right.$ | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ | $\left\lvert\, \begin{aligned} & 90-100 \\ & 90-100 \end{aligned}\right.$ | $\left\lvert\, \begin{array}{\|l\|} 75-100 \\ 76-100 \end{array}\right.$ | 72-100 | 63-90 | \| 38-46 | 19-24 |
|  | 11-67 |  |  |  |  |  |  |  | \|66-98 | 26-44 | 18-30 | 4-12 |
| Royosa-------- | $\begin{aligned} & 0-2 \\ & 2-60 \end{aligned}$ | Sandy loam <br> Loamy sand | SM | A-2 <br> A-2 | 0 | $\begin{aligned} & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 100 \\ & 100 \end{aligned}$ | $\begin{aligned} & 100 \\ & 100 \end{aligned}$ | $\left\lvert\, \begin{aligned} & \text { 68-78 } \\ & \mid 74-84 \end{aligned}\right.$ | $\left\lvert\, \begin{aligned} & 19-29 \\ & 25-35 \end{aligned}\right.$ | $\left\lvert\, \begin{array}{r} 22-35 \\ 0-23 \end{array}\right.$ | 6-13NP-6 |
|  |  |  | SM |  |  |  |  |  |  |  |  |  |
| 70 : |  |  |  |  |  |  |  |  |  |  |  |  |
| Sparham------- | 0-2 | $\begin{aligned} & \text { Clay loam } \\ & \text { Clay loam, silty clay, } \\ & \text { silty clay loam, clay } \\ & \text { Clay } \end{aligned}$ | CL | A-7 | 0 | 0 | 86-100 | 65-100 | 59-95 | 47-77 | 45-51 | 25-29 |
|  | 2-35 |  | $\left\lvert\, \begin{array}{cc} \mathrm{CH}, & \mathrm{CL} \\ \mathrm{CH}, & \mathrm{CL} \end{array}\right.$ | A-7 | 00 | $0$$0$ | $\left\lvert\, \begin{aligned} & 86-100 \\ & 86-100 \end{aligned}\right.$ | $\left\lvert\, \begin{array}{\|c} 64-100 \\ 64-100 \end{array}\right.$ | $\left\lvert\, \begin{aligned} & 58-100 \\ & 54-100 \end{aligned}\right.$ | 48-95 <br> 46-87 | $\left\lvert\, \begin{aligned} & 45-65 \\ & 49-65 \end{aligned}\right.$ | $\left\lvert\, \begin{aligned} & 25-40 \\ & 29-40 \end{aligned}\right.$ |
|  | 35-60 |  |  | A-7 |  |  |  |  |  |  |  |  |

Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | Liquid <br> limit | $\begin{array}{\|l} \text { Plas- } \\ \mid \text { ticity } \\ \text { index } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{gathered} \hline>10 \\ \text { inches } \end{gathered}$ | $\begin{gathered} 3-10 \\ \text { inches } \end{gathered}$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| 110: | In. |  |  |  | Pct. | Pct. |  |  |  |  | Pct. |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-4 | Silt loam | CL | A-6 | 0 | 0 | 80-100 | 55-100 | 50-99 | 42-85 | 31-43 | 11-18 |
|  | 4-14 | Clay loam | CL | A-6 | 0 | 0 | 83-100 | 62-100 | 54-94 | 42-74 | 39-47 | 19-25 |
|  | 14-60 | ```Clay loam, sandy clay loam``` | CL | A-6 | 0 | 0 | 83-100 | 62-100 | 54-94 | 42-74 | 37-46 | 19-25 |
| 113: |  |  |  |  |  |  |  |  |  |  |  |  |
| Teromote----- | 0-2 | Loam | CL-ML | A-4 | 0 | 0 | 100 | 100 | \| 85-91 | 60-66 | 23-31 | 7-12 |
|  | 2-12 | ```Loam, clay loam, sandy clay loam``` | CL | A-6 | 0 | 0 | 100 | 100 | \| 84-99 | 62-77 | 31-47 | 13-25 |
|  | 12-65 | ```Silty clay loam, clay loam, loam``` | CL | A-6 | 0 | 0 | 100 | 100 | -84-99 | 62-77 | \|31-46 | 13-25 |
| Ruson--------- | 0-3 | Clay loam | CL | A-6 | 0 | 0 | 82-100 | 59-100 | 51-94 | 39-74 | 39-49 | 19-25 |
|  | 3-65 | Silty clay, clay | CH, CL | A-7 | 0 | 0 | 83-100 | 62-100 | 56-100 | 46-83 | 49-61 | 29-37 |
| 115: |  |  |  |  |  |  |  |  |  |  |  |  |
| Menefee------ |  | Channery loam | \|CL, GC, SC |  | 0 | 0-11 | 73-85 | 50-85 | 42-81 | 31-62 | $33-45$ <br> $39-47$ | \| 13-21 |
|  | $2-11$ | Clay loam | CL | $\text { A- } 6$ | 0 | 0 | 89-100 | 74-100 | 65-94 | 51-74 | 39-47 | \|21-25 |
|  | 11-60 | Bedrock |  |  | --- | --- | --- | --- | --- | - | - | --- |
| 117: |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-7 | Loam | CL | A-6 | 0 | 0 | 100 | 100 | \| 87-92 | 64-69 | 33-41 | 13-17 |
| Chamita------ | 7-36 | Loam | CL | A-6 | 0 | 0 | 100 | 100 | \| 85-94 | 62-71 | 31-45 | 12-19 |
|  | 36-55 | Loam, clay loam | \| CL | A-6 | 0 | 0 | 100 | 100 | \| 82-99 | 60-77 | 31-49 | 12-25 |
|  | 55-60 | Gravelly sandy loam, loam | SM | A-1, A-2 | 0 | 0 | 91-100 | 51-95 | 38-75 | 18-39 | 17-24 | 2-6 |
| 118:Hesperus |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-4 | Loam | \| CL, CL-ML, ML | A-4 | 0 | 0-5 | 89-100 | 78-100 | 65-93 | 45-68 | 25-41 | 6-13 |
|  |  |  | CL | A-6 | 0 | 0-5 | 89-100 | 78-100 | 66-99 | 49-78 | 31-49 | 13-24 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | $\begin{aligned} & \text { \| Liquid } \\ & \mid \text { limit } \end{aligned}$ | Plasticity index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{gathered} >10 \\ \text { inches } \end{gathered}$ | $\begin{gathered} 3-10 \\ \text { inches } \end{gathered}$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| $\begin{aligned} & \text { 127: } \\ & \text { Wiggler } \end{aligned}$ | In. |  |  |  | Pct. | Pct. |  |  |  |  | Pct. |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 | Channery clay loam | \| GC | A-6 | 0 | 0 | 61-66 | 48-66 | 43-62 | 33-49 | 38-47 | 19-23 |
|  | 3-10 | Clay loam | CL | A-6 | 0 | 0 | 89-100 | 74-100 | 59-94 | 44-73 | 29-44 | 12-23 |
|  | 10-60 | Bedrock |  |  | --- | --- | --- | -- | --- | --- | --- | --- |
| 129 : |  |  |  |  |  |  |  |  |  |  |  |  |
| Nusmag-------- | 0-2 | Clay loam | CL | A-7 | 0 | 0 | 100 | 100 | 88-96 | 70-78 | 45-55 | 22-28 |
|  | 2-60 | Clay | CH | A-7 | 0 | 0 | 100 | 100 | \|85-100 | 72-87 | 50-66 | 29-40 |
| Tottles------ | 0-6 | Clay loam | CL | A-7 | 0 | 0 | 100 | 100 | \|89-94 | 69-74 | 43-51 | 21-25 |
|  | 6-21 | Clay | CH | A-7 | 0 | 0 | 100 | 100 | \| 91-96 | 74-79 | 50-58 | 28-32 |
|  | 21-60 | Clay | CH | A-7 | 0 | 0 | 100 | 100 | \|85-100 | 72-87 | 51-66 | 29-40 |
| 130: |  |  |  |  |  |  |  |  |  |  |  |  |
| Topetaul----- | 0-6 | Cobbly silt loam | CL | A-6 | 0 | 27-40 | 86-100 | 64-100 | 58-99 | 49-85 | 29-41 | 12-19 |
|  | 6-13 | Very cobbly silt loam | GC, SC | A-2, A-6 | 0 | 37-44 | 67-90 | 39-90 | -36-88 | 31-76 | 30-38 | 13-19 |
|  | 13-28 | Very gravelly clay | \| GC | A-2, A-7 | 0 | 22-27 | 58-71 | 40-71 | 35-71 | 28-59 | 45-61 | 25-37 |
|  | 28-60 | Extremely cobbly clay | GC | A-2 | 0 | 41-55 | 40-75 | 23-75 | 19-75 | 16-63 | 45-61 | 25-37 |
| Hogg--------- | 0-7 | Loam | CL | A-6 | 0 | 0 | 88-100 | 71-100 | 61-94 | 44-71 | 29-41 | 12-19 |
|  | 7-25 | Clay, clay loam | CH, CL | A-7 | 0 | 0 | 84-100 | 63-100 | 56-100 | 46-88 | 45-61 | 25-36 |
|  | 25-60 | Gravelly clay, clay loam, clay | CH, CL | A-7 | 0 | 0 | 76-90 | 56-90 | 49-90 | 40-78 | 45-61 | 25-37 |
| $132:$Stout |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-3 | Flaggy loam | CL | A-4 | 0 | 23-36 | 95-100 | 86-100 | 72-94 | 52-70 | 26-37 | 9-17 |
|  | 3-14 | Sandy loam, loam | SC-SM | A-4 | 0 | 0-15 | 94-100 | 83-100 | 70-94 | 50-70 | 24-36 | 9-17 |
|  | 14-18 | Bedrock |  |  | -- | --- | --- | --- | --- | -- | --- | --- |

Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | Liquid <br> limit | Plasticity index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{array}{c\|} \hline>10 \\ \text { inches } \end{array}$ | $\left\|\begin{array}{c} 3-10 \\ \text { inches } \end{array}\right\|$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| $\begin{aligned} & 170: \\ & \text { Sedillo } \end{aligned}$ | In. | ```Cobbly loam Cobbly sandy clay loam, very cobbly sandy clay loam``` | $\begin{aligned} & \text { \|CL, } \quad \text { SC } \\ & \mid \mathrm{GC} \end{aligned}$ | A-6 | Pct. | Pct. |  |  |  |  | Pct. |  |
|  |  |  |  |  | 0 | 16-28 | 77-92 | 58-92 | 50-86 | 36-65 | 29-41 | 12-19 |
|  | 12-36 |  |  | A-2, A-6$A-1, A-2$ | 0-10 | 28-46 | 57-85 | 39-85 | 31-80 | 17-50 |  | 12-19 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 36-60 | Very cobbly sandy loam, | GC-GM, SC-SM |  | 5-18 | 37-54 | 56-95 | 31-95 | 22-77 | 10-41 | 18-29 | 4-11 |
|  |  | extremely cobbly sandy loam |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 173 \text { : } \\ & \text { Oelop } \end{aligned}$ |  | Fine sandy loam <br> Sandy clay loam, clay <br> loam <br> Sandy loam, sandy clay <br> loam, clay loam |  |  |  |  |  |  |  |  |  |  |
|  | 0-5 |  |  | A-4 | 0 | 0 | 100 | 100 | 90-97 | 39-46 | 22-30 | 6-11 |
|  | 5-45 |  | CL | A-6 | 0 | 0 | 100 | 100 | 80-97 | 60-77 | 29-46 | 12-25 |
|  | 45-60 |  | SC-SM | A-2, A-4 | 0 | 0 | 100 | 100 | 73-80 | 35-42 | 20-29 | 6-11 |
| 180: |  |  |  |  |  |  |  |  |  |  |  |  |
| Oelop------- | 0-1 | Loam | CL | A-6 | 0 | 0 | 100 | 100 | 85-94 | 62-71 | 29-41 | 12-19 |
|  | 1-60 | Loam, clay loam, sandy clay loam | CL | A-6 | 0 | 0 | 100 | 100 | 80-97 | 60-77 | 29-46 | 12-25 |
| 182: |  |  |  |  |  |  |  |  |  |  |  |  |
| Oelop-- | 0-3 | Sandy loam | SC-SM | A-2, A-4 | 0 | 0 | 100 | 100 | 73-80 | 35-42 | 21-30 | 6-11 |
|  | 3-11 | Clay loam, sandy clay loam | CL | A-6 | 0 | 0 | 100 | 100 | 87-95 | 67-75 | 35-44 | 18-25 |
|  | 11-60 | Loam, sandy clay loam, clay loam | CL | A-6 | 0 | 0 | 100 | 100 | 82-92 | 45-55 | 29-40 | 13-21 |

Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued


Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | Liquid <br> limit | Plasticity index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\left\lvert\, \begin{array}{l\|} \hline>10 \\ \text { inches } \end{array}\right.$ | $\left\|\begin{array}{c} 3-10 \\ \text { inches } \end{array}\right\|$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
| $719 \text { : }$ <br> Alanos | In. |  |  |  | Pct. | Pct. |  |  |  |  | Pct. |  |
|  | 0-1 | Slightly decomposed | PT | A-8 | 0 | 0 | - | --- | --- | --- | --- | --- |
|  |  | plant material |  |  |  |  |  |  |  |  |  |  |
|  | 1-7 | Very cobbly loam | GC, GC-GM | A-2, A-4, A-6 | 0 | 29-44 | 61-84 | 38-84 | 31-80 | 21-60 | 22-41 | 6-17 |
|  | 7-27 | Very cobbly clay, very cobbly clay loam | $\begin{aligned} & \mathrm{CH}, \mathrm{CL}, \mathrm{GC}, \\ & \mathrm{SC} \end{aligned}$ | A-7 | 0-5 | 27-37 | 63-86 | 41-86 | 34-86 | 28-76 | 46-66 | 25-40 |
|  | 27-39 | Extremely cobbly sandy clay loam | GC | A-2 | 0-10 | 36-45 | 53-72 | 39-72 | 31-66 | 17-39 | 29-40 | 13-21 |
|  | 39-60 | Extremely cobbly sandy loam | GC-GM | A-1, A-2 | 11-16 | 36-45 | 50-76 | 41-76 | 29-62 | 14-34 | 20-32 | 6-13 |
| $\begin{aligned} & 802 \text { : } \\ & \text { Redondo- } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-2 | Slightly decomposed plant material | PT | A-8 | 0 | 0 | --- | --- | --- | --- | --- | --- |
|  | 2-5 | Gravelly sandy clay loam\| | SC | A-2, A-6 | 0 | 0-12 | 67-84 | 44-84 | 36-77 | 20-46 | 31-45 | 13-21 |
|  | 5-16 | Gravelly sandy clay loam\| |  | A-2, A-6 | 0 | 0-10 | 69-86 | 48-86 | 39-78 | 21-47 | 30-41 | 13-21 |
|  | 16-60 | Very cobbly sandy clay loam, extremely stony sandy clay loam | GC, SC | A-2 | 0 | 28-42 | 56-79 | 34-79 | 28-72 | 15-43 | 29-40 | 13-21 |
| $803 \text { : }$ <br> Rusbach |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-2 | Slightly decomposed plant material | PT | A-8 | 0 | 0 | --- | --- | --- | --- | --- | --- |
|  | 2-16 | Cobbly sandy loam | SC-SM, SM | A-1, A-2 | 0 | 16-24 | 75-96 | 50-96 | 37-79 | 18-43 | 16-28 | 2-10 |
|  | 16-25 | Cobbly loamy sand | SM | A-1, A-2 | 0 | 16-24 | 76-96 | 51-96 | 40-79 | 11-25 | 16-23 | 2-6 |
|  | 25-70 | Very cobbly loamy sand, extremely cobbly loamy sand | GM, SM | A-1 | 0 | 27-49 | 55-85 | 28-85 | 22-70 | 6-22 | 16-23 | 2-6 |
| DAM: |  |  |  |  |  |  |  |  |  |  |  |  |
| Dam------------ | --- | --- | - | --- | --- | --- | --- | --- | --- | --- | -- | --- |

Table 17.--Engineering properties--Continued

| Map symbol and soil name | Depth | USDA texture | Classification |  | Fragments |  | Percentage passing sieve number-- |  |  |  | Liquid <br> limit | Plasticity index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unified | AASHTO | $\begin{gathered} >10 \\ \text { inches } \end{gathered}$ | $\left\lvert\, \begin{gathered} 3-10 \\ \text { inches } \end{gathered}\right.$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 4 | 10 | 40 | 200 |  |  |
|  | In. |  |  |  | Pct. | Pct. |  |  |  |  | Pct. |  |
| W: |  |  |  |  |  |  |  |  |  |  |  |  |
| Water--------- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

## Table 18.--Physical soil properties

Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

| Map symbol and soil name | Depth | Sand | Silt | Clay | ```Moist bulk density``` | Saturated hydraulic conductivity | $\left\|\begin{array}{c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}\right\|$ | Linear extensibility | Organic matter | Erosion factors |  |  | Wind erodi\|bility group | \|Wind <br> erodi- <br> bility <br> index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | $\mathrm{g} / \mathrm{cc}$ | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 9 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pinavetes------- | 0-3 | 75-95 | 0-20 | 3-10 | 1.40-1.50 | 42.34-141.14 | \|0.06-0.08| | 0.0-2.9 | 0.5-1.0 | . 17 | . 17 | 2 | 2 | 134 |
|  | 3-60 | 75-95 | 0-20 | 7-15 | 1.40-1.50 | 42.34-141.14 | 0.05-0.07\| | 0.0-2.9 | 0.0-0.8 | . 20 | . 20 |  |  |  |
| Florita--------- | 0-2 | 55-80 | 5-30 | 15-20 | 1.40-1.50 | \|14.11-42.34 | \|0.11-0.13| | 0.0-2.9 | 0.5-1.0 | . 24 | . 24 | 5 | 3 | 86 |
|  | 2-6 | 55-80 | 5-30 | 10-15 | 1.40-1.50 | 14.11-42.34 | 0.11-0.13\| | 0.0-2.9 | 0.0-0.5 | . 24 | . 24 |  |  |  |
|  | 6-24 | 55-80 | 10-30 | 5-10 | 1.40-1.50 | 14.11-42.34 | 0.10-0.12\| | 0.0-2.9 | 0.0-0.5 | . 20 | . 20 |  |  |  |
|  | 24-60 | 55-80 | 5-30 | 10-15 | 1.40-1.50 | 14.11-42.34 | 0.11-0.13\| | 0.0-2.9 | 0.0-0.5 | . 24 | . 24 |  |  |  |
| 10: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sparank--------- | 0-2 | 15-35 | 50-75 | 20-27 | 1.10-1.20 | 4.23-14.11 | \|0.10-0.12| | 0.0-2.9 | 1.0-2.0 | . 43 | . 43 | 5 | 4L | 86 |
|  | 2-60 | 10-35 | 20-60 | 35-50 | 1.35-1.45 | 0.01-0.42 | \|0.10-0.12| | 6.0-8.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
| San Mateo------- | 0-2 | 15-35 | 50-75 | 15-25 | 1.35-1.50 | 4.23-14.11 | \|0.19-0.21| | 0.0-2.9 | 0.5-0.9 | . 43 | . 43 | 5 | 4 L | 86 |
|  | 2-60 | 5-70 | 5-80 | 18-35 | 1.35-1.45 | 1.41-4.23 | 0.14-0.16\| | 3.0-5.9 | 0.0-0.8 | . 37 | . 37 |  |  |  |
| 11: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fruitland------- | 0-2 | 55-75 | 10-35 | 5-10 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13\| | 0.0-2.9 | 0.6-0.8 | . 28 | . 28 | 5 | 3 | 86 |
|  | 2-60 | 55-75 | 10-35 | 5-18 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
| 12: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pinavetes------- |  |  |  |  | 1.40-1.50 | 42.34-141.14 | \|0.06-0.08| | 0.0-2.9 |  | . 17 | . 17 | 2 | 2 | 134 |
|  | 4-60 | $\begin{array}{\|r} 75- \\ 100 \end{array}$ | 0-20 | 7-15 | 1.40-1.50 | 42.34-141.14 | 0.05-0.07\| | 0.0-2.9 | 0.0-0.8 | . 20 | . 20 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\begin{array}{\|c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | Linear extensibility | Organic matter | Erosion factors\| |  |  | Wind erodibility group | Wind \|erodibility index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 18: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Abiquiu-------- | 0-4 | 10-40 | 50-75 | 15-25 | 1.20-1.30 | 4.23-14.11 | \|0.19-0.21| | 0.0-2.9 | 0.0-1.0 | . 43 | . 43 | 2 | 4L | 86 |
|  | 4-8 | 50-90 | 10-40 | 5-15 | 1.40-1.45 | 42.34-141.14\|0 | \|0.09-0.11| | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  | 8-60 | 85- | 0-15 | 2-7 | 1.40-1.50 | \| 42.34-141.14|0. | \|0.01-0.03| | 0.0-2.9 | 0.0-0.5 | . 02 | . 10 |  |  |  |
|  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |
| Peralta--------- | 0-18 | 75-90 | 0-15 | 5-10 | 1.40-1.55 | 42.34-141.14\| | \|0.06-0.08| | 0.0-2.9 | 0.5-0.9 | . 20 | . 20 | 5 | 2 | 134 |
|  | 18-65 |  | 0-45 | 10-30 | 1.45-1.55 | 4.23-14.11 | \|0.10-0.12| | 0.0-2.9 | 0.0-0.5 | . 20 | . 20 |  |  |  |
|  |  | $100$ |  |  |  |  |  |  |  |  |  |  |  |  |
| 20: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Menefee-------- | 0-3 | 30-50 | 30-50 | 20-25 | 1.05-1.15 | 4.23-14.11 | \|0.16-0.18| | 0.0-2.9 | 2.0-3.0 | . 37 | . 37 | 1 | 4L | 86 |
|  | 3-10 | 20-45 | 25-40 | 30-35 | 1.25-1.35 | 0.42-1.41 | \|0.19-0.21| | 3.0-5.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 0.00-1.40 | --- | --- | --- | --- | -- |  |  |  |
| Vessilla--------- | 0-2 | 55-75 | 5-35 | 10-20 | 1.45-1.55 | 14.11-42.34 | \|0.11-0.13| | 0.0-2.9 | 0.6-0.9 | . 24 | . 24 | 1 | 3 | 86 |
|  | 2-10 | 55-75 | 5-35 | 8-18 | 1.50-1.60 | 14.11-42.34 | \|0.13-0.15| | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 1.40-14.00 | --- | --- | --- | -- | --- |  |  |  |
| Rock outcrop- | 0-60 | --- | --- | --- | --- | 0.00-0.00 | --- | --- | --- | -- | --- | -- | --- | --- |
| 21: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Werlog---------- | 0-6 | 25-45 | 20-45 | 28-35 | 1.40-1.50 | 1.41-4.23 | \|0.15-0.19| | 3.0-5.9 | 0.9-1.0 | . 32 | . 32 | 4 | 6 | 48 |
|  | 6-55 | 25-70 | 5-45 | 18-35 | 1.40-1.50 | 1.41-4.23 | \|0.15-0.19| | 3.0-5.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
|  | 55-60 | 85- | 0-15 | 0-10 | 1.40-1.50 | \| $42.34-141.14 \mid 0$ | 0.03-0.06\| | 0.0-2.9 | 0.0-0.5 | . 10 | . 15 |  |  |  |
|  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |
| 22: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Jocity--------- | 0-11 | 55-75 |  | 10-20 | 1.25-1.30 | 14.11-42.34 | 0.11-0.13\| | 0.0-2.9 | 0.2-0.5 | . 24 | . 24 | 5 | 3 | 86 |
|  | 11-22 | 55-75 | 5-35 | 10-20 | 1.25-1.30 | 4.23-14.11 | \|0.13-0.15| | 0.0-2.9 | 0.0-0.3 | . 28 | . 28 |  |  |  |
|  | $22-41$ | 25-70 | 10-45 | 25-35 | 1.45-1.50 | 1.41-4.23 | \|0.13-0.15| | 3.0-5.9 | 0.0-0.3 | . 32 | . 32 |  |  |  |
|  | 41-60 | 55-75 | 5-35 | 10-20 | 1.25-1.30 | 4.23-14.11 | \|0.13-0.15| | 0.0-2.9 | 0.0-0.3 | . 28 | . 28 |  |  |  |

Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | ```Moist bulk density``` | Saturated hydraulic conductivity | $\begin{array}{\|c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | Linear extensibility | Organic <br> matter | Erosion factors |  |  | Wind erodibility group | \| Wind\|erodi-\|bilityindex |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | $\mathrm{g} / \mathrm{cc}$ | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| Fruitland------- | 0-7 | 55-75 | 10-40 | 5-10 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.6-0.8 | . 28 | . 28 | 5 | 3 | 86 |
|  | 7-41 | 55-75 | 5-35 | 5-18 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  | 41-60 | 55-75 | 5-35 | 10-15 | 1.45-1.55 | 14.11-42.34 | 0.08-0.10 | 0.0-2.9 | 0.0-0.5 | . 15 | . 32 |  |  |  |
| 40: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pinitos--------- | 0-4 | 55-75 | 5-40 | 15-20 | 1.45-1.55 | 14.11-42.34 | 0.13-0.15 | 0.0-2.9 | 0.5-0.9 | . 28 | . 28 | 5 | 3 | 86 |
|  | 4-28 | 25-75 | 5-40 | 20-35 | 1.40-1.50 | 4.23-14.11 | 0.17-0.19 | 3.0-5.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
|  | 28-60 | 50-75 | 5-35 | 15-25 | 1.40-1.50 | 14.11-42.34 | 0.13-0.15 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
| Menefee--------- | 0-2 | 25-45 | 30-50 | 30-35 | 1.25-1.35 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 1 | 4L | 86 |
|  | 2-10 | 25-45 | 20-45 | 30-35 | 1.25-1.35 | 0.42-1.41 | 0.19-0.21 | 3.0-5.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 0.00-1.40 | --- | --- | --- | --- | -- |  |  |  |
| Vessilla-------- | 0-2 | 55-75 | 5-40 | 10-20 | 1.45-1.55 | 14.11-42.34 | 0.14-0.16 | 0.0-2.9 | 0.6-0.9 | . 28 | . 32 | 1 | 3 | 86 |
|  | 2-10 | 55-75 | 5-40 | 8-18 | 1.50-1.60 | 14.11-42.34 | 0.13-0.15 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 1.40-14.00 | --- | --- | --- | --- | -- |  |  |  |
| 42 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Walrees--------- | 0-4 | 25-45 | 20-45 | 28-35 | 1.40-1.50 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 1.0-2.0 | . 37 | . 37 | 4 | 4L | 86 |
|  | 4-23 | 10-35 | 50-70 | 18-35 | 1.40-1.50 | 1.41-4.23 | 0.13-0.19 | 0.0-2.9 | 0.5-1.0 | . 49 | . 49 |  |  |  |
|  | 23-60 | 85- | 0-20 | 0-15 | 1.40-1.50 | 42.34-141.14 | 0.04-0.06 | 0.0-2.9 | 0.0-0.8 | . 10 | . 10 |  |  |  |
|  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |
| Abiquiu--------- | 0-3 | 55-75 | 5-40 | 15-20 | 1.40-1.50 | 14.11-42.34 | 0.13-0.15 | 0.0-2.9 | 0.0-1.0 | . 28 | . 28 | 3 | 3 | 86 |
|  | 3-17 | 55- | 0-35 | 5-15 | 1.40-1.45 | 42.34-141.14 | 0.09-0.11 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 17-60 | $\begin{array}{\|r\|} 85- \\ 100 \end{array}$ | 0-10 | 2-7 | 1.40-1.50 | 42.34-141.14 | 0.01-0.03 | 0.0-2.9 | 0.0-0.5 | . 02 | . 10 |  |  |  |

Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\begin{array}{\|c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | $\left\lvert\, \begin{gathered} \text { Linear } \\ \text { extensi- } \\ \text { bility } \end{gathered}\right.$ | Organic <br> matter | \|Erosion factors |  |  | Wind erodibility group | \| Wind\|erodi-\|bilityindex |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| Orlie----------- | 0-3 | 30-50 | 30-50 | 20-27 | 1.10-1.20 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 2.0-3.0 | . 37 | . 43 | 5 | 6 | 48 |
|  | 3-35 | 5-40 | 30-65 | 28-35 | 1.40-1.50 | 1.41-4.23 | \|0.19-0.21 | 3.0-5.9 | 0.7-0.9 | . 37 | . 37 |  |  |  |
|  | 35-60 | 10-70 | 10-70 | 28-35 | 1.40-1.50 | 1.41-4.23 | \|0.16-0.20 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
| Nalivag--------- | 0-3 | 30-50 | 30-50 | 15-27 | 1.35-1.45 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 0.5-1.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 3-60 | 25-50 | 25-50 | 20-35 | 1.45-1.55 | 1.41-4.23 | 0.17-0.20 | 3.0-5.9 | 0.5-1.0 | . 32 | . 32 |  |  |  |
| 102 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Menefee--------- | 0-2 | 25-45 | 20-45 | 30-35 | 1.25-1.35 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 1 | 4L | 86 |
|  | 2-14 | 25-45 | 20-45 | 30-35 | 1.25-1.35 | 0.42-1.41 | \|0.19-0.21 | 3.0-5.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 14-60 | --- | --- | --- | --- | 0.00-1.40 | --- | --- | --- | --- | - |  |  |  |
| Nalivag--------- | 0-4 | 30-50 | 30-50 | 15-27 | 1.35-1.45 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 0.5-1.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 4-60 | 25-50 | 20-50 | 20-35 | 1.45-1.55 | 1.41-4.23 | \|0.17-0.20 | 3.0-5.9 | 0.5-1.0 | . 32 | . 32 |  |  |  |
| 103: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Orlie----------- | 0-3 | 55-75 | 5-35 | 15-20 | 1.15-1.25 | 1.41-4.23 | 0.11-0.14 | 0.0-2.9 | 2.0-3.0 | . 28 | . 32 | 5 | 3 | 86 |
|  | 3-13 | 10-45 | 20-65 | 28-35 | 1.40-1.50 | 1.41-4.23 | \|0.19-0.21 | 3.0-5.9 | 0.7-0.9 | . 37 | . 37 |  |  |  |
|  | 13-60 | 10-75 | 5-65 | 28-35 | 1.40-1.50 | 1.41-4.23 | \|0.16-0.20 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
| 106: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Amal----------- | 0-4 | 0-40 | 55-80 | 18-27 | 1.25-1.35 | 4.23-14.11 | \|0.19-0.21 | 0.0-2.9 | 1.0-2.0 | . 43 | . 43 | 5 | 5 | 56 |
|  | 4-43 | 5-45 | 25-65 | 28-35 | 1.35-1.45 | 1.41-4.23 | \|0.19-0.21 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  | 43-60 | 5-45 | 25-65 | 28-35 | 1.35-1.45 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
| 107: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Berryman-------- | 0-3 | 5-45 | 50-75 | 18-26 | 1.15-1.25 | 4.23-14.11 | 0.19-0.21 | 0.0-2.9 | 1.0-2.0 | . 43 | . 43 | 5 | 4 L | 86 |
|  | 3-80 | 5-20 | 45-65 | 18-35 | 1.45-1.55 | 0.42-1.41 | \|0.18-0.20 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | Available water capacity | Linear extensibility | Organic <br> matter | Erosion factors |  |  | Wind erodibility group | \| Wind\|erodi-\|bilityindex |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| Ruson----------- | 0-2 | 5-45 | 50-75 | 20-26 | 1.00-1.15 | 4.23-14.11 | 0.19-0.21 | 0.0-2.9 | 1.0-2.0 | . 43 | . 49 | 5 | 4L | 86 |
|  | 2-19 | 0-40 | 20-65 | 35-40 | 1.40-1.50 | 1.41-4.23 | \|0.17-0.19 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  | 19-65 | 0-40 | 20-65 | 40-50 | 1.40-1.50 | 0.42-1.41 | \|0.13-0.15 | 6.0-8.9 | 0.0-0.5 | . 24 | . 28 |  |  |  |
| 108: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Peney----------- | 0-3 | 30-50 | 30-50 | 18-26 | 1.15-1.25 | 4.23-14.11 | 0.11-0.13 | 0.0-2.9 | 1.0-2.0 | . 20 | . 37 | 1 | 5 | 56 |
|  | 3-10 | 5-45 | 25-70 | 18-35 | 1.20-1.30 | 1.41-4.23 | \|0.15-0.17 | 3.0-5.9 | 0.0-1.0 | . 43 | . 43 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 0.00-0.42 | --- | --- | --- | --- | - |  |  |  |
| Ransect--------- | 0-3 | 5-20 | 45-65 | 28-35 | 1.25-1.40 | 1.41-4.23 | 0.19-0.20 | 3.0-5.9 | 1.0-2.0 | . 37 | . 37 | 2 | 4L | 86 |
|  | 3-38 | 25-45 | 20-50 | 28-35 | 1.30-1.45 | 1.41-4.23 | 0.19-0.20 | 3.0-5.9 | 0.0-0.8 | . 37 | . 37 |  |  |  |
|  | 38-60 | --- | --- | --- | --- | 0.00-0.42 | --- | --- | --- | --- | --- |  |  |  |
| 109: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Calendar-------- | 0-2 | 30-50 | 30-50 | 20-26 | 1.15-1.25 | 4.23-14.11 | 0.11-0.13 | 0.0-2.9 | 1.0-2.0 | . 20 | . 43 | 3 | 5 | 56 |
|  | 2-17 | 5-40 | 20-55 | 40-45 | 1.40-1.50 | 0.42-1.41 | 0.13-0.15 | 6.0-8.9 | 0.0-0.5 | . 20 | . 24 |  |  |  |
|  | 17-35 | 5-40 | 20-55 | 40-45 | 1.40-1.50 | 0.42-1.41 | 0.13-0.15 | 6.0-8.9 | 0.0-0.5 | . 20 | . 24 |  |  |  |
|  | 35-60 | --- | --- | --- | --- | 0.00-0.42 | --- | --- | --- | --- | -- |  |  |  |
| 110: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Vessilla-------- | 0-1 | 55-80 | 5-35 | 10-20 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.6-0.9 | . 24 | . 24 | 1 | 3 | 86 |
|  | 1-15 | 55-75 | 5-35 | 8-18 | 1.50-1.60 | 14.11-42.34 | \|0.13-0.15 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  | 15-60 | --- | --- | --- | --- | 1.40-14.00 | --- | --- | --- | -- | --- |  |  |  |
| Menefee--------- | 0-3 | 25-45 | 25-45 | 30-35 | 1.25-1.35 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 1 | 4 L | 86 |
|  | 3-10 | 25-45 | 25-45 | 30-35 | 1.25-1.35 | 0.42-1.41 | \|0.19-0.21 | 3.0-5.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 0.00-1.40 | -- | --- | --- | -- | --- |  |  |  |
| Orlie----------- | 0-4 | 5-40 | 50-75 | 18-27 | 1.05-1.15 | 4.23-14.11 | 0.19-0.21 | 0.0-2.9 | 2.0-3.0 | . 43 | . 43 | 5 | 6 | 48 |
|  | 4-14 | 5-45 | 25-65 | 28-35 | 1.40-1.50 | 1.41-4.23 | \|0.19-0.21 | 3.0-5.9 | 0.7-0.9 | . 37 | . 37 |  |  |  |
|  | 14-60 | 5-75 | 5-65 | 28-35 | 1.40-1.50 | 1.41-4.23 | 0.16-0.20 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\begin{array}{\|c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | $\left\lvert\, \begin{gathered} \text { Linear } \\ \text { extensi- } \\ \text { bility } \end{gathered}\right.$ | Organic <br> matter | Erosion factors |  |  | Wind erodibility group | \| Wind\|erodi-\|bilityindex |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 113 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Teromote-------- | 0-2 | 30-50 | 30-50 | 12-18 | 1.20-1.30 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 0.5-0.9 | . 37 | . 37 | 5 | 4 L | 86 |
|  | 2-12 | 25-75 | 5-45 | 20-35 | 1.40-1.50 | 1.41-4.23 | 0.16-0.21 | 3.0-5.9 | 0.0-0.8 | . 37 | . 37 |  |  |  |
|  | 12-65 | 10-50 | 20-65 | 20-35 | 1.40-1.50 | 1.41-4.23 | 0.18-0.21 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
| Ruson----------- | 0-3 | 25-45 | 20-45 | 28-35 | 1.20-1.30 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 1.0-2.0 | . 32 | . 37 | 5 | 4L | 86 |
|  | 3-65 | 5-45 | 15-55 | 40-50 | 1.40-1.50 | 0.42-1.41 | 0.13-0.15 | 6.0-8.9 | 0.0-0.5 | . 24 | . 28 |  |  |  |
| 115: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Menefee--------- | 0-2 | 30-50 | 30-50 | 20-30 | 1.25-1.35 | 1.41-4.23 | 0.16-0.20 | 0.0-2.9 | 2.0-3.0 | . 20 | . 37 | 1 | 4L | 86 |
|  | 2-11 | 20-45 | 20-45 | 30-35 | 1.25-1.35 | 0.42-1.41 | 0.19-0.21 | 3.0-5.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 11-60 | --- | --- | --- | --- | 0.00-1.40 | --- | --- | --- | --- | - |  |  |  |
| 117: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chamita--------- | 0-7 | 30-50 | 30-50 | 20-25 | 1.15-1.30 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 2.0-3.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 7-36 | 30-50 | 30-50 | 18-27 | 1.15-1.30 | 1.41-14.11 | 0.16-0.21 | 3.0-5.9 | 1.0-3.0 | . 37 | . 37 |  |  |  |
|  | 36-55 | 25-50 | 20-50 | 18-35 | 1.25-1.40 | 1.41-14.11 | 0.16-0.21 | 3.0-5.9 | 1.0-2.0 | . 37 | . 37 |  |  |  |
|  | 55-60 | 55-85 | 5-35 | 5-10 | 1.35-1.50 | 14.11-42.34 | 0.07-0.10 | 0.0-2.9 | 0.5-1.0 | . 15 | . 17 |  |  |  |
| 118 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hesperus------------ | 0-4 | 30-50 | 30-50 | 10-20 | 1.30-1.35 | 4.23-14.11 | 0.16-0.19 | 0.0-2.9 | 2.0-5.0 | . 28 | . 28 | 5 | 5 | 56 |
|  | 4-60 | 5-50 | 20-65 | 20-35 | 1.30-1.40 | 1.41-14.11 | 0.16-0.19 | 0.0-2.9 | 1.0-3.0 | . 32 | . 32 |  |  |  |
| Pastorius------- | 0-12 | 5-40 | 50-75 | 15-25 | 1.05-1.10 | 4.23-14.11 | 0.19-0.21 | 0.0-2.9 | 2.0-4.0 | . 43 | . 43 | 3 | 6 | 48 |
|  | 12-20 | 30-50 | 30-50 | 18-25 | 1.25-1.35 | 4.23-14.11 | 0.12-0.14 | 0.0-2.9 | 1.0-3.0 | . 20 | . 37 |  |  |  |
|  | 20-60 | 30-75 | 5-50 | 20-30 | 1.40-1.50 | 4.23-14.11 | 0.07-0.08 | 0.0-2.9 | 0.0-0.8 | . 10 | . 28 |  |  |  |
| Chamita--------- | 0-10 | 25-45 | 25-45 | 27-35 | 1.20-1.35 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 5 | 6 | 48 |
|  | 10-36 | 30-50 | 30-50 | 18-27 | 1.15-1.30 | 1.41-14.11 | 0.16-0.21 | 3.0-5.9 | 1.0-3.0 | . 37 | . 37 |  |  |  |
|  | 36-60 | 25-45 | 25-50 | 18-35 | 1.25-1.40 | 1.41-14.11 | 0.16-0.21 | 3.0-5.9 | 1.0-2.0 | . 37 | . 37 |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\begin{array}{\|l} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | Linear extensibility | Organic matter | Erosion factors |  |  | Wind erodibility group | Wind erodi- <br> bility <br> index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 119 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Roques---------- | 0-2 | 20-45 | 25-45 | 35-40 | 1.35-1.45 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 1.0-2.0 | . 32 | . 32 | 5 | 4 | 86 |
|  | 2-60 | 15-45 | 10-40 | 40-55 | 1.20-1.35 | 0.01-0.42 | \|0.14-0.16 | 6.0-8.9 | 0.0-0.5 | . 20 | . 20 |  |  |  |
| Nusmag---------- | 0-3 | 20-45 | 25-45 | 32-40 | 1.15-1.30 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 5 | 4 | 86 |
|  | 3-60 | 10-40 | 10-40 | 40-55 | 1.20-1.30 | 0.01-0.42 | \|0.14-0.16 | 6.0-8.9 | 0.5-1.0 | . 20 | . 20 |  |  |  |
| 125 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hogg---------------- | 0-3 | 30-50 | 30-50 | 18-27 | 1.10-1.20 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 1.0-2.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 3-60 | 20-45 | 5-40 | 35-50 | 1.40-1.55 | 0.42-1.41 | \|0.14-0.18 | 6.0-8.9 | 0.0-0.8 | . 32 | . 37 |  |  |  |
| Mara------------ | 0-2 | 30-50 | 30-50 | 17-27 | 1.35-1.45 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 0.5-1.0 | . 37 | . 37 | 5 | 4 L | 86 |
|  | 2-18 | 10-40 | 20-60 | 27-35 | 1.35-1.45 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 0.5-0.9 | . 37 | . 37 |  |  |  |
|  | 18-60 | 20-45 | 20-45 | 27-35 | 1.45-1.55 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
| 127: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rombo----------- | 0-4 | 15-45 | 15-40 | 40-50 | 1.40-1.50 | 0.42-1.41 | \|0.14-0.16| | 6.0-8.9 | 0.5-1.0 | . 20 | . 20 | 3 | 4 | 86 |
|  | 4-21 | 15-45 | 15-40 | 40-50 | 1.40-1.50 | 0.42-1.41 | \|0.14-0.16| | 6.0-8.9 | 0.0-0.5 | . 20 | . 24 |  |  |  |
|  | 21-37 | 15-45 | 15-40 | 40-50 | 1.40-1.50 | 0.42-1.41 | \|0.14-0.16 | 6.0-8.9 | 0.0-0.5 | . 10 | . 15 |  |  |  |
|  | 37-60 | --- | --- | --- | --- | 0.00-1.40 | --- | --- | --- | --- | - |  |  |  |
| Wiggler--------- | 0-3 | 20-45 | 20-45 | 28-32 | 1.25-1.35 | 1.41-4.23 | 0.12-0.14 | 3.0-5.9 | 0.5-2.0 | . 20 | . 28 | 2 | 4 L | 86 |
|  | 3-10 | 20-50 | 20-50 | 18-32 | 1.25-1.35 | 4.23-14.11 | \|0.17-0.18 | 3.0-5.9 | 0.0-0.6 | . 37 | . 37 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 0.00-1.40 | --- | --- | --- | --- | --- |  |  |  |
| 129 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nusmag---------- | 0-2 | 20-45 | 25-45 | 32-40 | 1.15-1.30 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 5 | 4 | 86 |
|  | 2-60 | 10-50 | 10-40 | 40-55 | 1.20-1.30 | 0.01-0.42 | \|0.14-0.16 | 6.0-8.9 | 0.5-1.0 | . 20 | . 20 |  |  |  |
| Tottles--------- | 0-6 | 20-45 | 25-40 | 30-35 | 1.15-1.25 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 5 | 4L | 86 |
|  | 6-21 | 10-45 | 10-40 | 40-45 | 1.40-1.50 | 0.42-1.41 | \|0.14-0.16| | 3.0-5.9 | 1.0-2.0 | . 20 | . 20 |  |  |  |
|  | 21-60 | 10-45 | 10-40 | 40-55 | 1.35-1.50 | 0.42-1.41 | \|0.14-0.16 | 6.0-8.9 | 0.7-0.9 | . 20 | . 20 |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | ```Moist bulk density``` | Saturated hydraulic conductivity | $\left\lvert\, \begin{gathered} \text { Available } \\ \text { water } \\ \text { capacity } \end{gathered}\right.$ | Linear extensibility | Organic matter | Erosion factors |  |  | Wind erodibility group | Wind erodibility index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | $\mathrm{g} / \mathrm{cc}$ | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 130: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Topetaul------- | 0-6 | 10-40 | 50-75 | 18-27 | 1.10-1.20 | 4.23-14.11 | \|0.14-0.16| | 0.0-2.9 | 1.0-2.0 | . 24 | . 43 | 3 | 7 | 38 |
|  | 6-13 | 10-40 | 50-75 | 20-27 | 1.25-1.35 | 4.23-14.11 | \|0.09-0.11| | 0.0-2.9 | 0.7-0.9 | . 15 | . 43 |  |  |  |
|  | 13-28 | 10-45 | 15-40 | 35-50 | 1.40-1.50 | 0.42-1.41 | 0.06-0.08\| | 6.0-8.9 | 0.0-0.5 | . 05 | . 32 |  |  |  |
|  | 28-60 | 10-45 | 15-40 | 35-50 | 1.35-1.50 | 0.42-1.41 | 0.04-0.06\| | 6.0-8.9 | 0.0-0.5 | . 02 | . 24 |  |  |  |
| Hogg------------ | 0-7 | 30-50 | 30-50 | 18-27 | 1.10-1.20 | 4.23-14.11 | \|0.16-0.18| | 0.0-2.9 | 1.0-2.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 7-25 | 10-45 | 15-45 | 35-50 | 1.40-1.55 | 0.42-1.41 | 0.14-0.18\| | 6.0-8.9 | 0.0-0.8 | . 32 | . 37 |  |  |  |
|  | 25-60 | 15-45 | 20-45 | 35-50 | 1.40-1.60 | 0.42-1.41 | 0.14-0.18\| | 6.0-8.9 | 0.0-0.5 | . 37 | . 55 |  |  |  |
| 132 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Stout----------- | 0-3 | 30-50 | 30-50 | 15-25 | 1.35-1.45 | 4.23-14.11 | \|0.12-0.14| | 0.0-2.9 | 0.5-0.9 | . 20 | . 37 | 1 | 6 | 48 |
|  | 3-14 | 30-70 | 10-45 | 15-25 | 1.35-1.50 | 14.11-42.34 | 0.12-0.17\| | 0.0-2.9 | 0.0-0.5 | . 24 | . 28 |  |  |  |
|  | 14-18 | --- | --- | --- |  | 1.40-14.00 | --- | --- | --- | --- | -- |  |  |  |
| Carjo----------- | 0-5 | 30-50 | 30-50 | 18-27 | 1.10-1.20 | 4.23-14.11 | \|0.07-0.09| | 0.0-2.9 | 1.0-2.0 | . 10 |  | 3 | 8 | 0 |
|  | 5-10 | 20-45 | 30-40 | 30-40 | 1.40-1.50 | 1.41-4.23 | 0.14-0.16\| | 3.0-5.9 | 0.0-1.0 | . 15 | . 24 |  |  |  |
|  | 10-38 | 15-45 | 15-45 | 35-50 | 1.40-1.55 | 0.42-1.41 | 0.14-0.21\| | 6.0-8.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 38-60 |  | --- | --- | --- | 1.40-14.00 | --- | --- |  | --- | -- |  |  |  |
| Rock outcrop- | 0-60 | --- | --- | --- |  | 0.00-0.00 | --- | --- | --- | --- | --- | -- | --- | --- |
| 133 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Carrick-------- | 0-3 | 10-40 | 50-75 | 20-27 | 1.20-1.30 | 4.23-14.11 | \|0.19-0.21| | 0.0-2.9 | 1.0-2.0 | . 43 | . 43 | 5 | 6 | 48 |
|  | 3-9 | 5-20 | 45-65 | 28-34 | 1.30-1.50 | 1.41-4.23 | 0.19-0.21\| | 3.0-5.9 | 0.0-0.9 | . 37 | . 37 |  |  |  |
|  | 9-60 | 0-20 | 40-70 | 35-50 | 1.40-1.50 | 0.42-1.41 | 0.16-0.20\| | 6.0-8.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
| 136 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Elpedro--------- | 0-3 | 5-40 | 50-75 | 15-22 | 1.15-1.25 | 4.23-14.11 | \|0.19-0.21| | 0.0-2.9 | 0.5-0.9 | . 43 | . 43 | 5 | 5 | 56 |
|  | 3-25 | 0-20 | 45-70 | 21-35 | 1.35-1.45 | 1.41-4.23 | 0.17-0.19\| | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  | 25-60 | 0-45 | 30-80 | 20-35 | 1.40-1.50 | 4.23-14.11 | \|0.17-0.19| | 0.0-2.9 | 0.0-0.5 | . 43 | . 43 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | ```Moist bulk density``` | \| Saturated hydraulic conductivity | $\begin{array}{\|l} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | Linear extensibility | Organic matter | Erosion factors |  |  | Wind erodibility group | Wind erodi- <br> bility <br> index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | $\mathrm{g} / \mathrm{cc}$ | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 137: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Yata----------- | 0-10 | 30-50 | 30-50 | 20-25 | 1.05-1.15 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 2.0-3.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 10-21 | 0-20 | 45-65 | 35-40 | 1.25-1.40 | 1.41-4.23 | 0.14-0.16 | 3.0-5.9 | 1.0-2.0 | . 20 | . 37 |  |  |  |
|  | 21-60 | 0-15 | 40-55 | 40-50 | 1.25-1.40 | 0.42-1.41 | 0.08-0.10 | 6.0-8.9 | 0.7-0.9 | . 10 | . 32 |  |  |  |
| Eody------------ | 0-4 | 30-50 | 30-50 | 20-27 | 1.25-1.35 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 1.0-2.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 4-60 | 0-40 | 20-65 | 35-50 | 1.40-1.55 | 0.42-1.41 | 0.14-0.21 | 6.0-8.9 | 0.0-0.9 | . 24 | . 24 |  |  |  |
| 140: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Espiritu-------- | 0-5 | 30-50 | 30-50 | 18-27 | 1.10-1.20 | 4.23-14.11 | 0.08-0.10 | 0.0-2.9 | 1.0-2.0 | . 10 | . 49 | 3 | 8 | 0 |
|  | 5-19 | 20-75 | 10-45 | 25-35 | 1.40-1.50 | 4.23-14.11 | 0.08-0.11 | 3.0-5.9 | 0.5-1.0 | . 10 | . 32 |  |  |  |
|  | 19-40 | 45-70 | 5-25 | 20-25 | 1.40-1.50 | 4.23-14.11 | 0.08-0.10 | 0.0-2.9 | 0.0-0.5 | . 10 | . 32 |  |  |  |
|  | 40-60 | 55-80 | 5-30 | 12-20 | 1.40-1.50 | 14.11-42.34 | 0.06-0.08 | 0.0-2.9 | 0.0-0.5 | . 10 | . 24 |  |  |  |
| Wauquie--------- | 0-3 | 30-50 | 30-50 | 10-20 | 1.15-1.25 | 4.23-14.11 | 0.09-0.10 | 0.0-2.9 | 0.6-0.9 | . 10 | . 37 | 2 | 7 | 38 |
|  | 3-13 | 50-70 | 5-25 | 20-30 | 1.35-1.45 | 4.23-14.11 | 0.06-0.07 | 0.0-2.9 | 0.0-0.5 | . 10 | . 37 |  |  |  |
|  | 13-19 | 50-75 | 5-30 | 20-30 | 1.35-1.45 | 4.23-14.11 | 0.04-0.05 | 0.0-2.9 | 0.0-0.5 | . 05 | . 32 |  |  |  |
|  | 19-60 | 30-75 | 10-50 | 10-15 | 1.35-1.45 | 14.11-42.34 | 0.05-0.08 | 0.0-2.9 | 0.0-0.5 | . 10 | . 37 |  |  |  |
| 141: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capillo--------- |  | 30-50 | 30-50 | 15-25 | 1.15-1.25 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 1.0-2.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 4-11 | 10-50 | 30-75 | 15-25 | 1.20-1.30 | 4.23-14.11 | 0.17-0.19 | 0.0-2.9 | 0.5-1.0 | . 37 | . 37 |  |  |  |
|  | 11-16 | 10-45 | 25-65 | 35-45 | 1.35-1.40 | 0.42-1.41 | 0.19-0.21 | 6.0-8.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  | 16-60 | 10-40 | 20-55 | 35-45 | 1.40-1.50 | 0.42-1.41 | 0.16-0.18 | 6.0-8.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
| Carjo------------ | 0-4 | 30-50 | 30-50 | 18-27 | 1.10-1.20 | 4.23-14.11 | 0.12-0.14 | 0.0-2.9 | 1.0-2.0 | . 20 | . 37 | 3 | 7 | 38 |
|  | 4-31 | 15-40 | 15-40 | 35-50 | 1.40-1.55 | 0.42-1.41 | 0.14-0.21 | 6.0-8.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 31-60 | --- | --- | --- | --- | 1.40-14.00 | --- | --- | --- | -- | --- |  |  |  |
| Vamer----------- | 0-2 | 30-50 | 30-50 | 15-25 | 1.20-1.25 | 4.23-14.11 | 0.12-0.14 | 0.0-2.9 | 1.0-2.0 | . 20 | . 32 | 2 | 7 | 38 |
|  | 2-19 | 15-40 | 15-60 | 35-50 | 1.55-1.65 | 0.42-1.41 | 0.13-0.19 | 3.0-5.9 | 0.7-0.9 | . 37 | . 37 |  |  |  |
|  | 19-60 | - | - | - | --- | 1.40-14.00 | --- | --- | --- | -- | --- |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | ```Moist bulk density``` | Saturated hydraulic conductivity | $\left\|\begin{array}{c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}\right\|$ | Linear extensibility | Organic matter | Erosion factors |  |  | Wind erodibility group | Wind erodi- <br> bility <br> index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | $\mathrm{g} / \mathrm{cc}$ | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 142 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pinavetes - | 0-2 | 75-90 | 0-15 |  | 1.40-1.50\| | 42.34-141.14 | 0.06-0.08 | 0.0-2.9 | 0.5-1.0 | . 17 | . 17 | 2 | 2 | 134 |
|  | 2-60 | 75- | 0-20 | $7-15$ | 1.40-1.50\| | 42.34-141.14 | 0.05-0.07\| | 0.0-2.9 | 0.0-0.8 | . 20 | . 20 |  |  |  |
|  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |
| 145 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Dermala--------- | 0-3 | 30-50 | 30-50 | 10-18 | 1.30-1.40\| | 14.11-42.34 | 0.08-0.09 | 0.0-2.9 | 0.5-1.0 | . 10 | . 32 | 5 | 7 | 38 |
|  | 3-12 | 25-70 | 10-45 | 28-35 | 1.30-1.45\| | 1.41-4.23 | 0.15-0.20\| | 3.0-5.9 | 0.0-0.5 | . 32 | . 37 |  |  |  |
|  | 12-32 | 25-50 | 20-50 | 20-30 | 1.40-1.50\| | 4.23-14.11 | 0.13-0.16\| | 0.0-2.9 | 0.0-0.5 | . 15 | . 28 |  |  |  |
|  | 32-60 | 25-70 | 10-45 | 28-35 | 1.30-1.50\| | 1.41-4.23 | 0.15-0.20 | 3.0-5.9 | 0.0-0.5 | . 32 | . 37 |  |  |  |
| Rosced---------- | 0-5 | 55-80 | 5-35 | 10-15 | 1.40-1.50\| | 14.11-42.34 | 0.04-0.06\| | 0.0-2.9 | 1.0-2.0 | . 10 | . 24 | 3 | 6 | 48 |
|  | 5-16 | 55-85 | 5-40 | 10-15 | 1.40-1.50\| | 14.11-42.34 | 0.08-0.10 | 0.0-2.9 | 0.0-0.5 | . 15 | . 32 |  |  |  |
|  | 16-33 | 55-85 | 5-40 | 10-15 | 1.40-1.50\| | 14.11-42.34 | 0.04-0.06 | 0.0-2.9 | 0.0-0.5 | . 10 | . 37 |  |  |  |
|  | 33-60 | 75- | 0-20 | 3-8 | 1.20-1.30\| | 42.34-141.14 | 0.03-0.05\| | 0.0-2.9 | 0.0-0.5 | . 02 | . 10 |  |  |  |
|  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |
| $146 \text { : }$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Parida---------- | 0-3 | 55-85 | 5-40 | 10-18 | 1.40-1.50\| | 14.11-42.34 | 0.04-0.07 | 0.0-2.9 | 0.5-0.9 | . 10 | . 24 | 5 | 6 | 48 |
|  | 3-28 | 55-85 | 5-40 | 10-18 | 1.40-1.50\| | 14.11-42.34 | 0.08-0.10 | 0.0-2.9 | 0.0-0.5 | . 15 | . 28 |  |  |  |
|  | 28-65 | 55-85 | 5-40 | 7-18 | 1.40-1.50\| | 14.11-42.34 | 0.07-0.10 | 0.0-2.9 | 0.0-0.5 | . 15 | . 28 |  |  |  |
| Palacid--------- | 0-4 | 55-85 | 5-40 | 10-20 | 1.40-1.50\| | 14.11-42.34 | 0.05-0.06\| | 0.0-2.9 | 0.5-0.9 | . 10 | . 24 | 5 | 6 | 48 |
|  | 4-14 | 30-45 | 20-55 | 18-35 | 1.35-1.45\| | 4.23-14.11 | 0.15-0.17 | 3.0-5.9 | 0.5-0.8 | . 37 | . 37 |  |  |  |
|  | $14-45$ | 20-45 | 20-45 | 27-35 | 1.35-1.45\| | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | $0.0-0.5$ | $.32$ | $.32$ |  |  |  |
|  | 45-68 | 20-50 | 30-50 | 18-35 | 1.35-1.45\| | 1.41-4.23 | 0.14-0.16\| | 3.0-5.9 | 0.0-0.5 | . 15 | . 28 |  |  |  |
| 147: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Dermala--------- | 0-4 | 30-50 | 30-50 | 10-18 | 1.30-1.40\| | 14.11-42.34 | 0.08-0.09 | 0.0-2.9 | 0.5-1.0 | . 10 | . 32 | 5 | 7 | 38 |
|  | 4-60 | 20-50 | 25-50 | 20-30 | 1.40-1.50\| | 4.23-14.11 | 0.13-0.16\| | 0.0-2.9 | 0.0-0.5 | . 15 | . 28 |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\begin{array}{\|c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | Linear extensibility | Organic matter | Erosion factors |  |  | Wind erodibility group | Wind erodi- <br> bility <br> index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 147: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chimayo--------- | 0-3 | 55-85 | 5-40 | 10-18 | 1.40-1.50 | 14.11-42.34 | 0.05-0.07 | 0.0-2.9 | 0.5-0.9 | . 10 | . 24 | 1 | 6 | 48 |
|  | 3-13 | 55-85 | 5-40 | 10-18 | 1.40-1.50 | 14.11-42.34 | \|0.05-0.07 | 0.0-2.9 | 0.0-0.5 | . 10 | . 32 |  |  |  |
|  | 13-60 | - | --- | --- | --- | 1.40-14.00 | - | --- | --- | --- | --- |  |  |  |
| 148: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chita----------- | 0-3 | 30-50 | 30-50 | 10-19 | 1.35-1.45 | 14.11-42.34 | 0.16-0.18 | 0.0-2.9 | 0.5-1.0 | . 37 | . 37 | 5 | 5 | 56 |
|  | 3-10 | 30-50 | 30-50 | 10-19 | 1.45-1.55 | 14.11-42.34 | 0.16-0.18 | 0.0-2.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  | 10-38 | 0-40 | 25-70 | 28-35 | 1.45-1.55 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  | 38-60 | 45-75 | 5-25 | 20-30 | 1.40-1.50 | 4.23-14.11 | 0.10-0.12 | 0.0-2.9 | 0.0-0.5 | . 15 | . 28 |  |  |  |
| 149: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Yarts----------- | 0-3 | 55-85 | 5-35 | 12-18 | 1.35-1.45 | 14.11-42.34 | 0.10-0.12 | 0.0-2.9 | 0.5-1.0 | . 17 | . 17 | 5 | 3 | 86 |
|  | 3-60 | 55-85 | 5-35 | 10-18 | 1.35-1.40 | 14.11-42.34 | 0.10-0.14 | 0.0-2.9 | 0.0-0.5 | . 20 | . 20 |  |  |  |
| 151: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Razito---------- | 0-4 | 75-95 | 0-20 | 3-10 | 1.45-1.55 | 42.34-141.14 | 0.06-0.08 | 0.0-2.9 | 0.5-1.0 | . 17 | . 17 | 5 | 2 | 134 |
|  | 4-60 | 75-90 | 0-25 | 3-10 | 1.45-1.55 | 42.34-141.14 | 0.06-0.08 | 0.0-2.9 | 0.0-0.5 | . 17 | . 17 |  |  |  |
| Fruitland------- | 0-3 | 55-85 | 5-35 | 5-10 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.6-0.8 | . 28 | . 28 | 5 | 3 | 86 |
|  | 3-50 | 55-85 | 5-40 | 5-18 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  | 50-60 | 75-90 | 0-20 | 5-10 | 1.45-1.55 | 42.34-141.14 | 0.07-0.09 | 0.0-2.9 | 0.0-0.5 | . 17 | . 17 |  |  |  |
| 170: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sedillo--------- | $0-12$ | 30-50 | 30-50 | 18-27 | 1.25-1.40 | 4.23-141.14 | 0.12-0.14 | 0.0-2.9 | 1.0-2.0 | . 20 | . 43 | 3 | 7 | 38 |
|  | 12-36 | 50-80 | 5-30 | 20-35 | 1.30-1.45 | 1.41-4.23 | 0.07-0.11 | 3.0-5.9 | 0.0-0.5 | . 10 | . 32 |  |  |  |
|  | 36-60 | 55-85 | 5-40 | 8-17 | 1.40-1.50 | 14.11-42.34 | 0.03-0.06 | 0.0-2.9 | 0.0-0.5 | . 10 | . 24 |  |  |  |
| 173: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Oelop----------- |  | 55-85 | 5-35 | 10-17 | 1.40-1.50 | 14.11-42.34 | 0.13-0.15 | 0.0-2.9 | 0.7-1.0 |  |  | 5 | 3 | 86 |
|  | 5-45 | 10-50 | 30-65 | 18-35 | 1.45-1.55 | 1.41-4.23 | 0.17-0.20 | 3.0-5.9 | 0.0-0.5 | . 37 | . 37 |  |  |  |
|  | 45-60 | 55-85 | 5-35 | 10-17 | 1.40-1.50 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.0-0.5 | . 24 | . 24 |  |  |  |

Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | ```Moist bulk density``` | Saturated hydraulic conductivity | Available water capacity | Linear extensibility | Organic <br> matter | Erosion factors |  |  | Wind erodibility group | Wind erodibility index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
| 210: | In. | Pct. | Pct. | Pct. | $\mathrm{g} / \mathrm{cc}$ | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
|  | 0-3 | --- | --- | 0-15 | 0.20-1.00 | 141.00- | 0.15-0.45 | 0.0-0.0 | 60-70 | -- | --- | 2 | 8 | 0 |
|  |  |  |  |  |  | 423.00 |  |  |  |  |  |  |  |  |
|  | 3-8 | 30-50 | 30-50 | 18-26 | 1.10-1.25 | 4.23-14.11 | 0.07-0.09 | 0.0-2.9 | 1.0-2.0 | . 10 | . 37 |  |  |  |
|  | 8-21 | 30-50 | 30-50 | 18-26 | 1.25-1.40 | 4.23-14.11 | 0.07-0.09 | 0.0-2.9 | 0.0-0.9 | . 10 | . 55 |  |  |  |
|  | 21-32 | 55-85 | 5-35 | 15-20 | 1.40-1.50 | 14.11-42.34 | 0.03-0.05 | 0.0-2.9 | 0.0-0.5 | . 05 | . 24 |  |  |  |
|  | 32-60 | --- | --- | --- | --- | 0.00-141.00 | --- | --- | --- | --- | --- |  |  |  |
| 211: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Angostura------- | 0-8 | 30-50 | 30-50 | 15-25 | 1.20-1.30 | 4.23-14.11 | 0.12-0.14 | 0.0-2.9 | 1.0-2.0 | . 20 | . 37 | 3 | 8 | 0 |
|  | 8-60 | 30-75 | 10-50 | 20-30 | 1.40-1.50 | 4.23-14.11 | 0.05-0.09 | 0.0-2.9 | 0.0-0.5 | . 05 | . 37 |  |  |  |
| 214 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Quimera--------- | 0-3 | 20-45 | 25-45 | 30-40 | 1.20-1.30 | 1.41-4.23 | 0.09-0.11 | 3.0-5.9 | 0.5-0.9 | . 10 | . 32 | 1 | 6 | 48 |
|  | 3-15 | 20-45 | 25-45 | 35-40 | 1.30-1.40 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
|  | 15-17 | 15-50 | 15-40 | 40-50 | 1.25-1.35 | 0.42-1.41 | 0.14-0.16 | 6.0-8.9 | 0.0-0.5 | . 20 | . 20 |  |  |  |
|  | 17-60 | --- | --- | --- | --- | 1.40-14.00 | --- | --- | --- | --- | --- |  |  |  |
| Vamer----------- | 0-3 | 20-45 | 25-45 | 27-35 | 1.35-1.45 | 1.41-4.23 | 0.11-0.13 | 3.0-5.9 | 1.0-2.0 | . 10 | . 32 | 1 | 8 | 0 |
|  | 3-19 | 10-45 | 20-60 | 35-50 | 1.55-1.65 | 0.42-1.41 | 0.13-0.19 | 3.0-5.9 | 0.7-0.9 | . 37 | . 37 |  |  |  |
|  | 19-60 | --- | --- | --- |  | 1.40-14.00 | --- |  |  | --- | --- |  |  |  |
| 215 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Saragote-------- | 0-1 | - | --- | 0-15 | 0.20-1.00 | $\begin{aligned} & 141.00- \\ & 423.00 \end{aligned}$ | 0.15-0.45 | 0.0-0.0 | 60-70 | --- | --- | 3 | 6 | 48 |
|  | 1-9 | 30-50 | 30-50 | 18-25 | 1.15-1.25 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 2.0-3.0 | . 37 | . 37 |  |  |  |
|  | 9-60 | 20-45 | 20-45 | 35-50 | 1.40-1.55 | 0.42-1.41 | 0.10-0.14 | 6.0-8.9 | 0.0-1.0 | . 15 | . 32 |  |  |  |
| Ess------------- | 0-12 | 30-50 | 30-50 | 20-30 | 1.25-1.35 | 4.23-14.11 | 0.13-0.15 | 0.0-2.9 | 1.0-2.0 | . 17 | . 32 | 3 | 8 | 0 |
|  | 12-40 | 20-70 | 5-45 | 20-30 | 1.25-1.35 | 4.23-14.11 | 0.07-0.10 | 3.0-5.9 | 0.5-2.0 | . 17 | . 64 |  |  |  |
|  | 40-60 | 50-85 | 0-30 | 10-22 | 1.30-1.40 | 4.23-14.11 | 0.05-0.08 | 0.0-2.9 | 0.0-0.8 | . 17 | . 64 |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\begin{array}{\|} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | Linear extensibility | Organic matter | Erosion factors |  |  | Wind erodibility group | $\mid$ Winderodi-$\mid$ bilityindex |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 216: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Angostura----------- | 0-12 | 55-85 | 0-35 | 15-20 | 1.45-1.55 | 14.11-42.34 | 0.06-0.08 | 0.0-2.9 | 1.0-2.0 | . 10 | . 24 | 2 | 6 | 48 |
|  | 12-60 | 45-70 | 0-25 | 20-30 | 1.45-1.55 | 4.23-14.11 | 0.05-0.06 | 0.0-2.9 | 0.0-0.8 | . 10 | . 32 |  |  |  |
| 220: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rock outcrop-------- | 0-60 | --- | --- | --- | --- | 0.00-0.00 | --- | --- | --- | --- | --- | -- | --- | --- |
| Vessilla------------ | 0-2 | 55-85 | 5-35 | 10-20 | 1.45-1.55 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.6-0.9 | . 24 | . 24 | 1 | 3 | 86 |
|  | 2-10 | 55-85 | 5-35 | 8-18 | 1.50-1.60 | 14.11-42.34 | 0.13-0.15 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 1.40-14.00 | --- | --- | --- | --- | -- |  |  |  |
| Menefee------------- | 0-1 | 20-45 | 25-45 | 30-35 | 1.25-1.35 | 1.41-4.23 | \|0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 1 | 4L | 86 |
|  | 1-10 | 20-45 | 25-45 | 30-35 | 1.25-1.35 | 0.42-1.41 | 0.19-0.21 | 3.0-5.9 | 0.0-1.0 | . 32 | . 32 |  |  |  |
|  | 10-60 | --- | --- | --- | --- | 0.00-1.40 | --- | --- | --- | --- | - |  |  |  |
| 228 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Suposo-------------- | 0-4 | 20-45 | 25-45 | 30-40 | 1.25-1.35 | 1.41-4.23 | 0.19-0.21 | 3.0-5.9 | 2.0-3.0 | . 32 | . 32 | 5 | 4 L | 86 |
|  | 4-16 | 20-45 | 15-40 | 40-55 | 1.35-1.45 | 0.42-1.41 | \|0.15-0.17 | 6.0-8.9 | 1.0-2.0 | . 20 | . 20 |  |  |  |
|  | 16-31 | 20-45 | 15-40 | 40-55 | 1.35-1.45 | 0.42-1.41 | \|0.15-0.17| | 6.0-8.9 | 1.0-2.0 | . 20 | . 20 |  |  |  |
|  | 31-60 | 20-45 | 15-40 | 40-55 | 1.35-1.45 | 0.42-1.41 | 0.15-0.17 | 6.0-8.9 | 0.0-1.0 | . 20 | . 20 |  |  |  |
| Brycan-------------- | 0-10 | 30-50 | 30-50 | 15-20 | 1.25-1.35 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 2.0-4.0 | . 37 | . 37 | 5 | 5 | 56 |
|  | 10-60 | 20-50 | 25-50 | 22-30 | 1.25-1.35 | 4.23-14.11 | 0.17-0.19 | 0.0-2.9 | 1.0-2.0 | . 37 | . 37 |  |  |  |
| 230: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-60 | - | - | --- | - | 0.00-0.42 | --- | --- | - | --- | --- | 1 | 4 | 86 |
| 240: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Riverwash, gravelly-- | 0-6 | 85- | 0-15 | 0-1 | 1.50-1.70 | 42.34-141.14 | 0.01-0.02 | 0.0-2.9 | 0.0-0.1 | . 02 | . 10 | - | 8 | 0 |
|  | 6-60 | 100 | 0-20 | 0-5 | 1.15-1.25 | 42.34-141.14 | 0.04-0.06\| | 0.0-2.9 | 0.0-0.5 | . 10 | . 10 |  |  |  |
|  |  | 100 |  |  |  |  |  |  |  |  |  |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\begin{array}{\|c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}$ | $\left\lvert\, \begin{gathered} \text { Linear } \\ \text { extensi- } \\ \text { bility } \end{gathered}\right.$ | Organic matter | Erosion factors |  |  | Wind erodibility group | \| Wind\|erodi-\|bilityindex |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| Florita | 0-3 | 55-85 | 5-35 | 10-15 | 1.40-1.50 | 14.11-42.34 | 0.09-0.10 | 0.0-2.9 | 0.5-1.0 | . 15 | . 28 | 5 | 5 | 56 |
|  | 3-38 | 55-85 | 5-35 | 10-15 | 1.40-1.50 | 14.11-42.34 | \|0.11-0.13 | 0.0-2.9 | 0.0-0.5 | . 24 | . 24 |  |  |  |
|  | 38-60 | 55-85 | 5-35 | 10-15 | 1.40-1.50 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.0-0.5 | . 24 | . 24 |  |  |  |
| Rock outcrop- | 0-60 | --- | --- | --- | --- | 0.00-0.00 | --- | --- | --- | --- | --- | -- | --- | --- |
| 242: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tinaja- | 0-4 | 30-50 | 30-50 | 20-30 | 1.15-1.25 | 4.23-14.11 | 0.03-0.05 | 0.0-2.9 | 0.5-1.0 | . 05 | . 37 | 3 | 8 | 0 |
|  | 4-43 | 20-70 | 5-45 | 20-30 | 1.35-1.45 | 4.23-14.11 | 0.07-0.10 | 0.0-2.9 | 0.0-0.5 | . 10 | . 32 |  |  |  |
|  | 43-60 | 55-85 | 5-35 | 15-20 | 1.40-1.50 | 14.11-42.34 | 0.11-0.13 | 0.0-2.9 | 0.0-0.5 | . 24 | . 28 |  |  |  |
| Rock outcrop- | 0-60 | --- | --- | --- | --- | 0.00-0.00 | --- | --- | --- | --- | --- | -- | --- | --- |
| 243: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Penistaja------- | 0-3 | 55-85 | 5-35 | 10-20 | 1.35-1.45 | 4.23-14.11 | 0.13-0.15 | 0.0-2.9 | 0.8-2.0 | . 28 | . 28 | 5 | 3 | 86 |
|  | 3-18 | 20-75 | 5-40 | 20-30 | 1.40-1.50 | 4.23-14.11 | 0.15-0.18 | 0.0-2.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
|  | 18-60 | 45-85 | 5-35 | 10-20 | 1.20-1.30 | 14.11-42.34 | 0.12-0.15 | 0.0-2.9 | 0.0-0.5 | . 28 | . 28 |  |  |  |
| 244: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scholle--------- | 0-7 | 30-50 | 30-50 | 15-25 | 1.10-1.20 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 1.0-2.0 | . 37 | . 49 | 5 | 5 | 56 |
|  | 7-17 | 45-75 | 5-30 | 20-30 | 1.40-1.50 | 4.23-14.11 | \|0.14-0.16 | 0.0-2.9 | 0.0-0.5 | . 32 | . 37 |  |  |  |
|  | 17-24 | 20-45 | 25-45 | 28-34 | 1.35-1.45 | 1.41-4.23 | \|0.14-0.16| | 3.0-5.9 | 0.0-0.5 | . 15 | . 24 |  |  |  |
|  | 24-60 | 45-85 | 5-35 | 18-34 | 1.30-1.45 | 4.23-14.11 | 0.08-0.10 | 3.0-5.9 | 0.0-0.5 | . 15 | . 32 |  |  |  |
| Silver---------- | 0-2 | 30-50 | 30-50 | 20-27 | 1.25-1.35 | 4.23-14.11 | 0.16-0.18 | 0.0-2.9 | 1.0-2.0 | . 37 | . 37 | 5 | 6 | 48 |
|  | 2-34 | 20-45 | 25-40 | 35-50 | 1.40-1.50 | 0.42-1.41 | \|0.15-0.20 | 6.0-8.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
|  | 34-48 | 45-75 | 0-25 | 30-35 | 1.40-1.50 | 4.23-14.11 | 0.14-0.16 | 3.0-5.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
|  | 48-60 | 45-75 | 0-25 | 30-35 | 1.40-1.50 | 4.23-14.11 | 0.10-0.12 | 3.0-5.9 | 0.0-0.5 | . 15 | . 24 |  |  |  |

Table 18.--Physical soil properties--Continued

| Map symbol and soil name | Depth | Sand | Silt | Clay | $\begin{aligned} & \text { Moist } \\ & \text { bulk } \\ & \text { density } \end{aligned}$ | Saturated hydraulic conductivity | $\left\|\begin{array}{c} \text { Available } \\ \text { water } \\ \text { capacity } \end{array}\right\|$ | Linear extensibility | Organic matter | Erosion factors\| |  |  | Wind erodi- <br> bility <br> group | Wind erodibility index |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | Kw | Kf | T |  |  |
|  | In. | Pct. | Pct. | Pct. | g/cc | um/sec | In./in. | Pct. | Pct. |  |  |  |  |  |
| 245 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maia------------ | 0-10 | 30-50 | 30-50 | 15-20 | 1.30-1.40 | 4.23-14.11 | \|0.16-0.18| | 0.0-2.9 | 1.0-4.0 | . 37 | . 37 | 5 | 5 | 56 |
|  | 10-16 | 20-70 | 10-45 | 25-35 | 1.40-1.50 | 1.41-4.23 | \|0.16-0.19| | 3.0-5.9 | 0.0-0.9 | . 32 | . 32 |  |  |  |
|  | 16-25 | 20-70 | 10-45 | 25-35 | 1.40-1.50 | 1.41-4.23 | \|0.12-0.14| | 3.0-5.9 | 0.5-0.7 | . 15 | . 28 |  |  |  |
|  | 25-60 | 30-70 | 10-50 | 15-25 | 1.40-1.50 | 14.11-42.34 | \|0.11-0.13| | 0.0-2.9 | 0.0-0.5 | . 20 | . 32 |  |  |  |
| Manzano--------- | 0-3 | 55-85 | 5-40 | 15-20 | 1.25-1.35 | 14.11-42.34 | \|0.13-0.15| | 0.0-2.9 | 1.0-3.0 | . 28 | . 28 | 4 | 3 | 86 |
|  | 3-49 | 30-50 | 30-50 | 20-27 | 1.20-1.35 | 4.23-14.11 | \|0.16-0.18| | 0.0-2.9 | 0.8-2.0 | . 37 | . 37 |  |  |  |
|  | 49-60 | 75-90 | 0-15 | 5-10 | 1.30-1.40 | 42.34-141.14 | \|0.04-0.06| | 0.0-2.9 | 0.0-0.5 | . 10 | . 20 |  |  |  |
| 246: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pena------------ | 0-2 | 55-85 | 5-35 | 10-20 | 1.30-1.40 | 14.11-42.34 | \|0.08-0.10| | 0.0-2.9 | 1.0-2.0 | . 15 | . 28 | 3 | 5 | 56 |
|  | 2-30 | 30-85 | 5-45 | 15-20 | 1.30-1.40 | \|14.11-42.34 | \|0.05-0.07| | 0.0-2.9 | 1.0-2.0 | . 10 | . 24 |  |  |  |
|  | 30-60 | 35-85 | 5-45 | 15-20 | 1.30-1.40 | 14.11-42.34 | \|0.05-0.07| | 0.0-2.9 | 0.0-0.5 | . 10 | . 43 |  |  |  |
| 247: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Wenota---------- | 0-8 | 0-20 | 45-65 | 35-40 | 1.30-1.40 | 1.41-4.23 | \|0.19-0.21| | 3.0-5.9 | 1.0-2.0 | . 37 | . 37 | 5 | 4L | 86 |
|  | 8-60 | 20-45 | 25-45 | 35-45 | 1.35-1.45 | 0.42-1.41 | \|0.15-0.19| | 3.0-5.9 | 0.0-0.5 | . 20 | . 20 |  |  |  |
| 248: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hagerman-------- | 0-3 | 55-85 | 5-35 | 10-20 | 1.45-1.55 | 14.11-42.34 | \|0.13-0.15| | 0.0-2.9 | 0.8-0.9 | . 28 | . 28 | 2 | 3 | 86 |
|  | 3-24 | 20-85 | 5-40 | 18-35 | 1.40-1.50 | 4.23-14.11 | \|0.15-0.17| | 3.0-5.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
|  | 24-60 | --- | --- | --- | --- | 1.40-14.00 | --- | --- | --- | --- | --- |  |  |  |
| Silver---------- | 0-4 | 55-85 | 5-35 | 15-20 | 1.30-1.40 | 14.11-42.34 | \|0.13-0.15| | 0.0-2.9 | 1.0-2.0 | . 28 | . 28 | 5 | 3 | 86 |
|  | 4-60 | 20-45 | 15-40 | 35-50 | 1.40-1.50 | 0.42-1.41 | $\|0.15-0.20\|$ | 6.0-8.9 | 0.0-0.5 | . 32 | . 32 |  |  |  |
| 249 : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Losmarios------- | 0-6 | 45-75 | 5-25 | 20-30 | 1.35-1.45 | 4.23-14.11 | \|0.03-0.05| | 0.0-2.9 | 0.6-0.9 | . 05 | . 32 | 5 | 8 | 0 |
|  | 6-29 | 0-20 | 30-55 | 45-60 | 1.40-1.50 | 0.42-1.41 | \|0.14-0.16| | 6.0-8.9 | 0.0-0.5 | . 24 | . 24 |  |  |  |
|  | 29-60 | 0-20 | 30-55 | 45-60 | 1.40-1.50 | 0.42-1.41 | \|0.15-0.17| | 6.0-8.9 | 0.0-0.5 | . 24 | . 24 |  |  |  |

Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued


Table 18.--Physical soil properties--Continued


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 | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 9 : |  |  |  |  |  |  |  |
| Pinavetes------- | 0-3 | 0.0-2.0 | 6.6-8.4 | 0-5 | 0 | 0.0-1.0 | 0 |
|  | $3-60$ | $4.0-10$ | 6.6-8.4 | 0-5 | 0 | 0.0-1.0 | 0 |
| Florita--------- | 0-2 | 10-15 | 7.9-8.4 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 2-6 | 5.0-10 | 7.9-8.4 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 6-24 | 5.0-10 | 7.9-8.4 | 0-2 | 0 | 0.0-2.0 | 0-5 |
|  | 24-60 | 5.0-10 | 8.5-9.0 | 0-5 | 0 | 0.0-2.0 | 0-12 |
| 10: |  |  |  |  |  |  |  |
| Sparank--------- |  |  |  | $1-10$ |  | $0.0-4.0$ |  |
|  | $2-60$ | 20-30 | 7.9-9.0 | $5-15$ | 0-1 | 4.0-8.0 | $13-30$ |
| San Mateo------- | 0-2 | 10-15 | 7.4-8.4 | 5-15 | 0-1 | 0.0-2.0 | 0-5 |
|  | 2-60 | 9.5-23 | 7.4-9.0 | 5-15 | 0-1 | 4.0-8.0 | 13-30 |
| 11: |  |  |  |  |  |  |  |
| Fruitland------- |  |  |  | $5-10$ |  |  |  |
|  | $2-60$ | 5.0-10 | 7.4-8.4 | $5-10$ | 0-1 | 0.0-4.0 | $0-2$ |
| 12: |  |  |  |  |  |  |  |
| Pinavetes------- | 0-4 | 0.0-1.0 | 6.6-8.4 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 4-60 | 5.0-10 | 6.6-8.4 | 0-5 | 0 | 0.0-2.0 | 0 |
| 18: |  |  |  |  |  |  |  |
| Abiquiu--------- | 0-4 | 10-15 | 7.9-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 4-8 | $5.0-10$ | 7.9-8.4 | $0-5$ | $0$ | 0.0-2.0 | $0$ |
|  | 8-60 | 1.4-5.4 | 7.9-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 18: $\quad$ Peralta | 0-18 | 10-15 | 7.9-9.6 | 5-10 | 0 | 2.0-4.0 | 0-10 |
|  | 18-65 | 5.7-19 | 7.9-9.6 | 5-10 | 0 | 4.0-10.0 | 0-10 |
| 20 : |  |  |  |  |  |  |  |
| Menefee--------- | 0-3 | 15-20 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 3-10 | 15-20 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 10-60 | --- | --- | --- | --- | --- | --- |
| Vessilla-------- | 0-2 | 5.0-10 | 6.6-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 2-10 | 5.0-10 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 10-60 | - | --- | --- | -- - | -- | --- |
| Rock Outcrop- | 0-60 | --- | --- | --- | --- | --- | --- |
| 21: |  |  |  |  |  |  |  |
| Werlog---------- | 0-6 | 15-25 | 7.4-9.0 | 1-3 | 0 | 2.0-4.0 | 0-20 |
|  | 6-55 | 9.5-22 | 7.4-9.0 | 1-3 | 0 | 2.0-4.0 | 0-20 |
|  | 55-60 | 0.0-7.4 | 7.4-9.0 | 1-3 | 0 | 2.0-4.0 | 0-20 |
| 22: |  |  |  |  |  |  |  |
| Jocity---------- | 0-11 | 5.0-10 | 7.9-8.4 | 5-10 | 0-5 | 0.0-4.0 | 0-5 |
|  | 11-22 | 5.0-10 | 7.9-8.4 | 5-10 | 0-5 | 0.0-4.0 | 0-5 |
|  | 22-41 | 15-20 | 7.9-8.4 | 5-10 | 0-5 | 0.0-4.0 | 0-5 |
|  | 41-60 | 5.0-10 | 7.9-8.4 | 5-10 | 0-5 | 0.0-4.0 | 0-5 |
| Gilco----------- | 0-12 | 5.0-10 | 6.6-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |
|  | 12-50 | 5.7-12 | 6.6-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |
|  | 50-60 | 5.7-12 | 6.6-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
|  |  |  |  |  |  |  |  |
| Gilco- | 0-14 | 10-15 | 6.6-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |
|  | 14-60 | 5.7-12 | 6.6-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |
| 24: |  |  |  |  |  |  |  |
| Jocity | 0-14 | 10-15 | 7.9-8.4 | 5-10 | 0-5 | 0.0-4.0 | 1-5 |
|  | 14-33 | 5.0-10 | 7.9-8.4 | 5-10 | 0-5 | 0.0-4.0 | 1-5 |
|  | 33-60 | 15-20 | 7.9-8.4 | 5-10 | 0-5 | 0.0-4.0 | 1-5 |
| 30: |  |  |  |  |  |  |  |
| San Mateo- | 0-3 | 5.0-15 | 7.4-8.4 | 5-15 | 0-1 | 0.0-2.0 | 0-5 |
|  | 3-60 | 9.5-23 | 7.4-9.0 | 5-15 | 0-1 | 4.0-8.0 | 13-30 |
| 31: |  |  |  |  |  |  |  |
| Gobernador------ |  |  | 7.8-9.6 |  |  |  |  |
|  | $2-60$ | 30-40 | 7.8-9.6 | 1-5 | 0 | 8.0-16.0 | $13-45$ |
| Orlie----------- | 0-3 | 15-25 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-35 | 20-25 | 6.6-8.4 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 35-60 | 20-20 | 7.4-8.4 | 5-10 | 0 | 0.0-4.0 | 0 |
| 34: |  |  |  |  |  |  |  |
| Alcalde--------- | 0-3 | 20-25 | 8.5-9.0 | 5-10 | 0-1 | 8.0-16.0 | 5-10 |
|  | 3-60 | 20-30 | 8.5-9.0 | 5-10 | 0-1 | 8.0-16.0 | 5-10 |
| $39:$ |  |  |  |  |  |  |  |
| Fruitland-------- | 0-7 | 5.0-10 | 7.4-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |
|  | 7-41 | 5.0-10 | 7.4-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |
|  | 41-60 | 5.0-10 | 7.4-8.4 | 5-10 | 0 | 0.0-4.0 | 0-2 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 40 : |  |  |  |  |  |  |  |
| Pinitos-------- | 0-4 | 10-15 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 4-28 | 15-20 | 6.6-7.8 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 28-60 | 10-15 | 7.4-7.8 | 5-10 | 0 | 0.0-2.0 | 0 |
| Menefee--------- | 0-2 | 20-25 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 2-10 | 15-20 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 10-60 | --- | --- | --- | - | --- | - |
| Vessilla-------- | 0-2 | 5.0-10 | 6.6-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 2-10 | 5.0-10 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 10-60 | --- | --- | --- | --- | --- | -- |
| 42 : |  |  |  |  |  |  |  |
| Walrees--------- | 0-4 | 15-25 | 7.9-9.0 | 2-7 | 0 | 2.0-8.0 | 0-5 |
|  | 4-23 | 10-25 | 7.9-9.0 | 2-7 | 0 | 2.0-8.0 | 0-5 |
|  | 23-60 | 0.0-11 | 7.9-9.0 | 2-7 | 0 | 0.0-2.0 | 0-5 |
| Abiquiu--------- | 0-3 | 5.0-10 | 7.9-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 3-17 | 5.0-10 | 7.9-8.4 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 17-60 | 1.4-5.4 | 7.9-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
| 50 : |  |  |  |  |  |  |  |
| Stout----------- | 0-2 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 2-5 | 10-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 5-14 | 10-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 14-60 | --- | --- | --- | --- | --- | --- |
| Kunz------------ | 0-3 | 10-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-60 | 10-20 | 6.6-7.3 | 0-5 | 0 | 0.0-2.0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 54 : |  |  |  |  |  |  |  |
| Capillo--------- | 0-4 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 4-11 | 12-22 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 11-16 | 20-30 | 6.6-7.8 | 0 | 0 | 0 | 0 |
|  | 16-60 | 20-30 | 6.6-7.8 | 0 | 0 | 0 | 0 |
| 60 : |  |  |  |  |  |  |  |
| Sparham--------- | 0-4 | 20-25 | 7.9-8.4 | 1-10 | 0 | 0.0-2.0 | 0-12 |
|  | 4-41 | 25-30 | 7.9-8.4 | 1-10 | 0 | 4.0-8.0 | 5-12 |
|  | 41-54 | 25-30 | 7.9-8.4 | 1-10 | 0 | 4.0-8.0 | 5-12 |
|  | 54-60 | 5.0-10 | 7.4-8.4 | 5-15 | 0 | 0.0-2.0 | 5-12 |
| 61: |  |  |  |  |  |  |  |
| Colomex--------- | 0-6 | 5. 0-15 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 6-12 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 12-34 | 10-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 34-60 | 5.0-10 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| 64 : |  |  |  |  |  |  |  |
| Dula------------ | 0-11 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 11-28 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 28-60 | 0.0-1.0 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| 65 : |  |  |  |  |  |  |  |
| Doslomas-------- | 0-7 | 10-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 7-28 | 20-30 | 6.6-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 28-60 | 3.0-7.0 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | Sodium adsorption ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | $\|\mathrm{meq} / 100 \mathrm{~g}\|$ | pH | Pct. | Pct. | mmhos/cm |  |
| 66 : |  |  |  |  |  |  |  |
| Encicado-------- | 0-17 | 20-30 | 7.4-7.8 | 0 | 0 | 0 | 0 |
|  | 17-35 | 20-35 | 7.4-7.8 | 0 | 0 | 0 | 0 |
|  | 35-60 | 20-25 | 7.4-7.8 | 0 | 0 | 0 | 0 |
| 69 : |  |  |  |  |  |  |  |
| Lindrith-------- | 0-11 | 15-20 | 6.6-7.8 | 5-15 | 0 | 0.0-4.0 | 0-5 |
|  | 11-67 | 4.7-12 | 7.9-8.4 | 5-15 | 0 | 0.0-4.0 | 0-5 |
| Royosa---------- | 0-2 | 2.0-10 | 6.6-7.8 | 0-5 | 0 | 0 | 0 |
|  | 2-60 | 0.0-1.0 | 6.6-7.8 | 0-5 | 0 | 0 | 0 |
| 70: |  |  |  |  |  |  |  |
| Sparham--------- | 0-2 | 20-25 | 7.4-9.0 | 1-10 | 0 | 8.0-16.0 | 0-13 |
|  | 2-35 | 20-35 | 7.4-9.0 | 5-15 | 0 | 8.0-16.0 | 13-30 |
|  | 35-60 | 25-35 | 7.4-9.0 | 5-15 | 0 | 8.0-16.0 | 13-30 |
| 80: |  |  |  |  |  |  |  |
| Orlie----------- | 0-3 | 15-25 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-35 | 20-25 | 6.6-8.4 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 35-60 | 20-20 | 7.4-8.4 | 5-10 | 0 | 0.0-4.0 | 0 |
| Nalivag--------- | 0-3 | 10-20 | 6.6-7.3 | 1-5 | 0 | 0.0-2.0 | 0-2 |
|  | 3-60 | 15-25 | 7.4-7.8 | 1-5 | 0 | 0.0-2.0 | 0-2 |
| 102 : |  |  |  |  |  |  |  |
| Menefee--------- | 0-2 | 20-25 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 2-14 | 15-20 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 14-60 | --- | --- | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Soil | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 102:Naliva |  |  |  |  |  |  |  |
|  | 0-4 | 10-20 | 6.6-7.3 | 1-5 | 0 | 0.0-2.0 | 0-2 |
|  | 4-60 | 15-25 | 7.4-7.8 | 1-5 | 0 | 0.0-2.0 | 0-2 |
| 103: |  |  |  |  |  |  |  |
| Orlie----------- | 0-3 | 10-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-13 | 20-25 | 6.6-8.4 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 13-60 | 20-20 | 7.4-8.4 | 5-10 | 0 | 0.0-4.0 | 0 |
| 106: |  |  |  |  |  |  |  |
| Amal----------- | 0-4 | 10-20 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 4-43 | 15-20 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 43-60 | 15-20 | 7.4-8.4 | 0-10 | 0 | 0.0-2.0 | 0 |
| 107: |  |  |  |  |  |  |  |
| Berryman-------- |  | $20-20$ | $7.4-8.4$ | $40-55$ |  |  |  |
|  | 3-80 | 20-20 | 7.4-8.4 | 40-55 | 0-2 | $0.0-2.0$ | $0-2$ |
| Ruson----------- | 0-2 | 15-25 | 7.4-8.4 | 1-5 | 0 | 0.0-4.0 | 0-5 |
|  | 2-19 | 20-25 | 7.4-8.4 | 1-5 | 0 | 0.0-4.0 | 0-5 |
|  | 19-65 | 19-30 | 7.4-8.4 | 1-5 | 0 | 0.0-4.0 | 0-5 |
| 108: |  |  |  |  |  |  |  |
| Peney----------- | 0-3 | 10-15 | 7.4-8.4 | 10-15 | 0 | 0.0-2.0 | 0 |
|  | 3-10 | 10-20 | 7.4-8.4 | 15-25 | 0 | 0.0-2.0 | 0 |
|  | 10-60 | --- | --- | --- | --- | --- | --- |
| Ransect--------- | 0-3 | 20-25 | 7.4-7.8 | 10-15 | 0 | 0.0-2.0 | 0-2 |
|  | 3-38 | 15-25 | 7.4-7.8 | 40-60 | 0 | 0.0-2.0 | 0-2 |
|  | 38-60 | --- | --- | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 109: | 0-2 | 10-15 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 2-17 | 20-25 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 17-35 | 20-25 | 7.4-8.4 | 10-15 | 0 | 0.0-4.0 | 0 |
|  | 35-60 | --- | --- | --- | --- | --- | --- |
| 110: |  |  |  |  |  |  |  |
| Vessilla-------- | 0-1 | 5.0-10 | 6.6-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 1-15 | 5.0-10 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 15-60 | --- | --- | --- | - | --- | --- |
| Menefee--------- | 0-3 | 20-25 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 3-10 | 15-20 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 10-60 | --- | --- | --- | -- | --- | - |
| Orlie----------- | 0-4 | 15-25 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 4-14 | 20-25 | 6.6-8.4 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 14-60 | 20-20 | 7.4-8.4 | 5-10 | 0 | 0.0-4.0 | 0 |
| 113 : |  |  |  |  |  |  |  |
| Teromote-------- | 0-2 | 5.0-15 | 7.4-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 2-12 | 10-30 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 12-65 | 10-30 | 7.9-8.4 | 10-15 | 0 | 0.0-4.0 | 0 |
| Ruson----------- | 0-3 | 20-25 | 7.4-8.4 | 1-5 | 0 | 0.0-4.0 | 0-5 |
|  | 3-65 | 25-30 | 7.4-8.4 | 1-5 | 0 | 0.0-4.0 | 0-5 |
| 115: |  |  |  |  |  |  |  |
| Menefee-------- | 0-2 | 15-20 | 7.4-8.4 | 10-15 | 0 | 0.0-2.0 | 0-5 |
|  | 2-11 | 15-20 | 7.4-8.4 | 10-15 | 0 | 0.0-2.0 | 0-5 |
|  | 11-60 | --- | --- | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | $\|\mathrm{meq} / 100 \mathrm{~g}\|$ | pH | Pct. | Pct. | mmhos/cm |  |
| 117: | 0-7 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 7-36 | 20-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 36-55 | 10-25 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 55-60 | 2.0-5.0 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| 118 : |  |  |  |  |  |  |  |
| Hesperus-------- | 0-4 | 10-25 | 6.1-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-60 | 15-35 | 6.1-7.8 | 0 | 0 | 0.0-2.0 | 0 |
| Pastorius------- | 0-12 | 15-25 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 12-20 | 10-20 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 20-60 | 10-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| Chamita--------- | 0-10 | 20-30 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 10-36 | 20-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 36-60 | 10-25 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| 119 : |  |  |  |  |  |  |  |
| Roques---------- | 0-2 | 25-30 | 6.6-7.3 | 1-5 | 0 | 0.0-2.0 | 0 |
|  | 2-60 | 25-35 | 7.4-7.8 | 5-10 | 0 | 0.0-2.0 | 0 |
| Nusmag---------- | 0-3 | 25-30 | 7.4-7.8 | 1-5 | 0 | 0 | 0 |
|  | 3-60 | 25-35 | 7.4-8.4 | 1-10 | 0 | 0 | 0 |
| 125: |  |  |  |  |  |  |  |
| Hogg------------ | 0-3 | 15-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 3-60 | 20-30 | 6.6-7.3 | 0 | 0 | 0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 125: | 0-2 | 10-20 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 2-18 | 15-25 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 18-60 | 15-20 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
| 127: |  |  |  |  |  |  |  |
| Rombo----------- | 0-4 | 25-30 | 6.6-7.3 | 0-5 | 0 | 0.0-2.0 | 0-5 |
|  | 4-21 | 25-30 | 7.4-7.8 | 0-5 | 0 | 0.0-2.0 | 0-5 |
|  | 21-37 | 25-30 | 7.4-7.8 | 0-10 | 0 | 0.0-2.0 | 0-5 |
|  | 37-60 | --- | --- | --- | --- | --- | --- |
| Wiggler--------- | 0-3 | 20-30 | 7.9-9.0 | 1-5 | 0 | 0.0-2.0 | 0-5 |
|  | 3-10 | 10-25 | 7.9-9.0 | 2-10 | 0 | 0.0-2.0 | 0-5 |
|  | 10-60 | --- | --- | --- | --- | --- | -- |
| 129: |  |  |  |  |  |  |  |
| Nusmag---------- | 0-2 | 25-30 | 7.4-7.8 | 1-5 | 0 | 0.0-2.0 | 0 |
|  | 2-60 | 25-35 | 7.4-8.4 | 1-10 | 0 | 0.0-2.0 | 0 |
| Tottles--------- | 0-6 | 20-25 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 6-21 | 25-30 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 21-60 | 25-35 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
| 130: |  |  |  |  |  |  |  |
| Topetaul-------- | 0-6 | 10-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 6-13 | 15-20 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 13-28 | 20-30 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 28-60 | 20-30 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 130: |  |  |  |  |  |  |  |
| Hogg | 0-7 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 7-25 | 20-30 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 25-60 | 20-30 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
| 132: |  |  |  |  |  |  |  |
| Stout----------- |  | 10-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-14 | 10-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 14-18 | --- |  | --- | -- | --- | --- |
| Carjo----------- | 0-5 | 10-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 5-10 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 10-38 | 15-25 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 38-60 | --- | --- | - | --- | --- | --- |
| Rock Outcrop-- | 0-60 | --- | --- | - | - | - | --- |
| 133: |  |  |  |  |  |  |  |
| Carrick--------- | 0-3 | 15-20 | 6.6-7.8 | 0 | 0 | 0 | 0 |
|  | 3-9 | 15-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 9-60 | 20-30 | 6.6-7.3 | 0 | 0 | 0 | 0 |
| 136: |  |  |  |  |  |  |  |
| Elpedro--------- | 0-3 | 10-15 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 3-25 | 10-20 | 7.4-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 25-60 | 10-20 | 7.4-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
| 137: |  |  |  |  |  |  |  |
| Yata----------- | 0-10 | 15-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 10-21 | 25-30 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 21-60 | 25-30 | 6.6-7.3 | 0 | 0 | 0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 137 : |  |  |  |  |  |  |  |
| Eody | 0-4 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-60 | 20-30 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| 140: |  |  |  |  |  |  |  |
| Espiritu-------- | 0-5 | 15-20 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 5-19 | 15-25 | 7.4-7.8 | 1-5 | 0 | 0.0-2.0 | 0 |
|  | 19-40 | 10-15 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 40-60 | 5.0-15 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
| Wauquie--------- | 0-3 | 5.0-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-13 | 15-20 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 13-19 | 15-20 | 7.4-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 19-60 | 5.0-10 | 7.4-7.8 | 5-15 | 0 | 0.0-2.0 | 0 |
| 141: |  |  |  |  |  |  |  |
| Capillo--------- | 0-4 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 4-11 | 10-15 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 11-16 | 20-30 | 6.6-7.8 | 0 | 0 | 0 | 0 |
|  | 16-60 | 20-30 | 6.6-7.8 | 0 | 0 | 0 | 0 |
| Carjo----------- | 0-4 | 10-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-31 | 15-25 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 31-60 | --- | --- | --- | --- | --- | -- |
| Vamer------------ | 0-2 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 2-19 | 25-30 | 6.6-7.3 | 0-5 | 0 | 0 | 0 |
|  | 19-60 | --- | --- | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | Sodium adsorption ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 142 : |  |  |  |  |  |  |  |
| Pinavetes------- | 0-2 | 0.0-1.0 | 6.6-8.4 | 0-5 | 0 | 0 | 0 |
|  | 2-60 | 5.0-10 | 6.6-8.4 | 0-5 | 0 | 0 | 0 |
| 145 : |  |  |  |  |  |  |  |
| Dermala--------- | 0-3 | 5. 0-15 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-12 | 15-20 | 7.4-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 12-32 | 10-20 | 7.9-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 32-60 | 15-20 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
| Rosced---------- | 0-5 | 5.0-15 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 5-16 | 5.0-10 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 16-33 | 5.0-10 | 7.9-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 33-60 | 1.0-5.0 | 7.9-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
| 146: |  |  |  |  |  |  |  |
| Parida---------- |  | 5.0-15 | 6.6-7.3 |  |  |  |  |
|  | $3-28$ | 5.0-10 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 28-65 | 5.0-10 | 7.4-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
| Palacid--------- | 0-4 | 5.0-15 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-14 | 10-25 | 7.4-7.8 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 14-45 | 15-25 | 7.9-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 45-68 | 10-25 | 7.9-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
| 147: |  |  |  |  |  |  |  |
| Dermala--------- | 0-4 | 5.0-15 | 7.4-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-60 | 10-20 | 7.9-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol <br> and soil name | Depth <br> Cation <br> exchange <br> capacity | Soil <br> reaction | Calcium <br> carbon- <br> ate | Gypsum | Salinity | Sodium <br> adsorp- <br> tion |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ratio |  |  |  |  |  |  |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 173 :Oelop | 0-5 | 5.0-15 | 7.9-8.4 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 5-45 | 10-25 | 7.9-8.4 | 1-10 | 0 | 2.0-4.0 | 0 |
|  | 45-60 | 5.0-10 | 7.9-9.0 | 5-15 | 0 | 2.0-4.0 | 0 |
| 180: |  |  |  |  |  |  |  |
| Oelop----------- | 0-1 | 10-20 | 7.9-8.4 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 1-60 | 10-25 | 7.9-8.4 | 0-10 | 0 | 2.0-4.0 | 0 |
| 182 : |  |  |  |  |  |  |  |
| Oelop----------- | 0-3 | 5.0-10 | 7.4-7.8 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 3-11 | 15-20 | 7.4-7.8 | 0-5 | 0 | 2.0-4.0 | 0 |
|  | 11-60 | 15-20 | 7.9-8.4 | 5-15 | 0 | 2.0-4.0 | 0 |
| 190: |  |  |  |  |  |  |  |
| Sedillo--------- | 0-5 | 10-15 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 5-25 | 10-15 | 7.9-9.0 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 25-60 | 5.0-10 | 7.9-9.0 | 15-30 | 0 | 0.0-2.0 | 0-5 |
| 200: |  |  |  |  |  |  |  |
| Katlon---------- | 0-4 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-18 | 20-30 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 18-31 | 15-25 | 6.1-6.5 | 0 | 0 | 0 | 0 |
|  | 31-80 | - | 4.5-5.0 | 0 | 0 | 0 | 0 |
| 201: |  |  |  |  |  |  |  |
| Lobat----------- | 0-1 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 1-7 | 15-20 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 7-48 | 20-20 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 48-60 | 15-20 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 201: | 0-2 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 2-4 | 10-20 | 5.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-15 | 10-15 | 5.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 15-58 | 15-20 | 5.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 58-60 | --- | --- | --- | --- | - | --- |
| 203 : |  |  |  |  |  |  |  |
| Nabor----------- | 0-6 | 20-25 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 6-17 | 25-30 | 7.4-7.8 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 17-37 | 25-35 | 7.4-7.8 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 37-60 | 20-30 | 7.4-7.8 | 5-10 | 0 | 0.0-2.0 | 0 |
| Elbuck---------- | 0-3 | 10-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-14 | 15-15 | 5.6-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 14-60 | 10-20 | 5.6-6.0 | 0-2 | 0 | 0.0-2.0 | 0 |
| 206: |  |  |  |  |  |  |  |
| Angostura------- | 0-4 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 4-43 | 15-25 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 43-60 | 15-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
| Gromes---------- | 0-3 | 10-20 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-60 | 15-25 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| 207: |  |  |  |  |  |  |  |
| Gromes | 0-11 | 10-20 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 11-60 | 15-25 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| Rock Outcrop---- | 0-60 | - | --- | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Soil | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 208: |  |  |  |  |  |  |  |
| Ess | 0-13 | 15-20 | 5.6-7.8 | 0 | 0 | 0 | 0 |
|  | 13-40 | 15-20 | 6.1-7.8 | 0 | 0 | 0 | 0 |
|  | 40-60 | 5.0-15 | 6.1-7.8 | 0 | 0 | 0 | 0 |
| Croftshaw------- | 0-10 | 10-20 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 10-60 | 20-25 | 5.6-6.0 | 0 | 0 | 0.0-2.0 | 0 |
| 209 : |  |  |  |  |  |  |  |
| Crubas---------- | 0-3 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-15 | 20-30 | 5.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 15-37 | 25-30 | 5.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 37-60 | 25-30 | 5.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| Bywell----------- | 0-4 | 15-20 | 5.6-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 4-11 | 15-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 11-42 | 5.0-10 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 42-60 | --- | --- | --- | --- | --- | --- |
| Croftshaw------- | 0-8 | 10-20 | 6.1-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 8-28 | 20-25 | 5.6-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 28-60 | 10-15 | 5.6-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| 210: |  |  |  |  |  |  |  |
| Rock Outcrop---- | 0-60 | --- | --- | - | -- | --- | --- |
| Bracos---------- | 0-3 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-8 | 15-20 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 8-21 | 10-20 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 21-32 | 10-15 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 32-60 | --- | --- | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | $\|\mathrm{meq} / 100 \mathrm{~g}\|$ | pH | Pct. | Pct. | mmhos/cm |  |
| Angostura------- | 0-8 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 8-60 | 15-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
| 214: |  |  |  |  |  |  |  |
| Quimera--------- | 0-3 | 20-25 | 6.6-7.8 | 1-5 | 0 | 2.0-4.0 | 0-4 |
|  | 3-15 | 20-25 | 6.6-7.8 | 5-10 | 0 | 2.0-4.0 | 0-4 |
|  | 15-17 | 25-30 | 7.9-8.4 | 5-10 | 0 | 2.0-4.0 | 0-4 |
|  | 17-60 | - | - | -- | --- | --- | --- |
| Vamer------------ | 0-3 | 20-25 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-19 | 25-30 | 6.6-7.3 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 19-60 | --- | --- | --- | --- | --- | --- |
| 215: |  |  |  |  |  |  |  |
| Saragote-------- | 0-1 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 1-9 | 15-20 | 5.6-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 9-60 | 30-35 | 5.6-6.0 | 0 | 0 | 0.0-2.0 | 0 |
| Ess------------- | 0-12 | 15-20 | 5.6-7.8 | 0 | 0 | 0 | 0 |
|  | 12-40 | 15-20 | 6.1-7.8 | 0 | 0 | 0 | 0 |
|  | 40-60 | 5.0-15 | 6.1-7.8 | 0 | 0 | 0 | 0 |
| 216: |  |  |  |  |  |  |  |
| Angostura------- |  | 10-15 | 6.6-7.3 |  |  |  |  |
|  | 12-60 | 15-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
| 220: |  |  |  |  |  |  |  |
| Rock Outcrop----- | 0-60 | --- | --- | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 220: |  |  |  |  |  |  |  |
| Vessilla------------ | 0-2 | 5.0-10 | 6.6-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 2-10 | 5.0-10 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-2 |
|  | 10-60 | - | --- | --- | --- | --- | --- |
| Menefee------------- | 0-1 | 20-25 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 1-10 | 15-20 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 10-60 | --- | --- | - | --- | -- | -- |
| 228 : |  |  |  |  |  |  |  |
| Suposo-------------- | 0-4 | 20-25 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 4-16 | 20-30 | 6.6-7.8 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 16-31 | 20-30 | 7.4-7.8 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 31-60 | 20-30 | 7.4-7.8 | 10-15 | 0 | 0.0-2.0 | 0 |
| Brycan------------- | 0-10 | 15-20 | 7.4-7.8 | 0 | 0 | 0 | 0 |
|  | 10-60 | 15-20 | 7.4-7.8 | 0 | 0 | 0 | 0 |
| 230: |  |  |  |  |  |  |  |
| Badland------------ | 0-60 | - | --- | - | -- | - | -- |
| 240: |  |  |  |  |  |  |  |
| Riverwash, gravelly-- | 0-6 | 25-30 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0-2 |
|  | 6-60 | 0.0-1.0 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0-1 |
| 241: |  |  |  |  |  |  |  |
| Florita------------- | 0-3 | 5.0-10 | 7.9-8.4 | 0-2 | 0 | 0.0-2.0 | 0-2 |
|  | 3-38 | 5.0-10 | 7.9-8.4 | 0-2 | 0 | 0.0-2.0 | 0-2 |
|  | 38-60 | 5.0-10 | 8.5-9.0 | 0-5 | 0 | 0.0-2.0 | 0-12 |
| Rock Outcrop-------- | 0-60 | --- | - | --- | --- | --- | --- |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| $\begin{aligned} & 242: \\ & \text { Tina } \end{aligned}$ |  |  |  |  |  |  |  |
|  | 0-4 | 15-20 | 7.4-7.8 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 4-43 | 10-20 | 7.4-7.8 | 15-35 | 0 | 0.0-2.0 | 0 |
|  | 43-60 | 10-15 | 7.4-7.8 | 5-20 | 0 | 0.0-2.0 | 0 |
| Rock Outcrop--- | 0-60 | --- | --- | --- | -- | --- | --- |
| 243: |  |  |  |  |  |  |  |
| Penistaja------- | 0-3 | 10-15 | 6.6-8.4 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-18 | 15-20 | 6.6-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 18-60 | 10-15 | 6.6-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
| 244 : |  |  |  |  |  |  |  |
| Scholle--------- | 0-7 | 10-20 | 6.6-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 7-17 | 15-20 | 6.6-7.8 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 17-24 | 15-20 | 7.4-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 24-60 | 10-20 | 7.4-8.4 | 15-30 | 0 | 0.0-2.0 | 0 |
| Silver---------- | 0-2 | 10-15 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 2-34 | 20-25 | 7.4-8.4 | 10-15 | 0 | 0.0-2.0 | 0 |
|  | 34-48 | 20-25 | 7.4-8.4 | 10-15 | 0 | 0.0-2.0 | 0 |
|  | 48-60 | 20-25 | 7.4-8.4 | 10-15 | 0 | 0.0-2.0 | 0 |
| 245: |  |  |  |  |  |  |  |
| Maia------------ | 0-10 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 10-16 | 15-25 | 6.6-7.8 | 0-5 | 0 | 0 | 0 |
|  | 16-25 | 15-25 | 7.9-8.4 | 5-15 | 0 | 0.0-2.0 | 0 |
|  | 25-60 | 10-15 | 8.5-9.0 | 15-30 | 0 | 0.0-2.0 | 0-5 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| 245: |  |  |  |  |  |  |  |
| Manzano--------- | 0-3 | 10-20 | 6.6-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-49 | 15-20 | 6.6-7.3 | 0-10 | 0 | 0.0-2.0 | 0 |
|  | 49-60 | 5.0-10 | 6.6-7.3 | 5-15 | 0 | 0.0-2.0 | 0 |
| 246: |  |  |  |  |  |  |  |
| Pena------------ | 0-2 | 5.0-15 | 7.9-8.4 | 5-10 | 0 | 0.0-2.0 | 0-5 |
|  | 2-30 | 10-15 | 7.9-8.4 | 10-15 | 0 | 0.0-2.0 | 0-5 |
|  | 30-60 | 5.0-10 | 7.9-8.4 | 15-30 | 0 | 0.0-2.0 | 0-5 |
| 247: |  |  |  |  |  |  |  |
| Wenota---------- |  | $20-25$ | 7.9-8.4 |  |  | 0.0-2.0 |  |
|  | $8-60$ | 20-25 | 7.9-8.4 | 1-5 | 0 | 0.0-2.0 | 0-5 |
| 248: |  |  |  |  |  |  |  |
| Hagerman-------- | 0-3 | 10-15 | 6.6-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-24 | 10-20 | 6.6-8.4 | 0-10 | 0 | 0.0-2.0 | 0 |
|  | 24-60 | --- | --- | --- | --- | --- | --- |
| Silver---------- | 0-4 | 10-15 | 7.4-8.4 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 4-60 | 20-25 | 7.4-8.4 | 10-15 | 0 | 0.0-2.0 | 0 |
| 249: |  |  |  |  |  |  |  |
| Losmarios------- | 0-6 | 15-20 | 7.4-7.8 | 5-10 | 0 | 0.0-2.0 | 0 |
|  | 6-29 | 25-35 | 7.9-8.4 | 5-15 | 0 | 2.0-4.0 | 0 |
|  | 29-60 | 25-35 | 7.9-8.4 | 5-15 | 0 | 2.0-4.0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\left\lvert\, \begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}\right.$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| $\begin{aligned} & 302: \\ & \text { Puye } \end{aligned}$ |  |  |  |  |  |  |  |
|  | 0-3 | 5.0-25 | 7.4-8.4 | 0-3 | 0 | 0.0-4.0 | 0 |
|  | 3-15 | 5.0-20 | 7.4-8.4 | 0-5 | 0 | 0.0-4.0 | 0 |
|  | 15-16 | --- | --- | - | --- | --- | --- |
|  | 16-60 | 5.0-10 | 7.4-8.4 | 0-5 | 0 | 0.0-4.0 | 0 |
| 401: |  |  |  |  |  |  |  |
| Chiminet-------- | 0-1 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 1-3 | 5.0-15 | 6.6-7.8 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-10 | 5.0-10 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 10-60 | --- | --- | --- | --- | - | --- |
| Rock Outcrop--- | 0-60 | --- | --- | --- | --- | - | --- |
| 407: |  |  |  |  |  |  |  |
| Totavi---------- | 0-3 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-6 | 10-15 | 6.6-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 6-28 | 5.0-10 | 6.6-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 28-60 | 5.0-10 | 6.6-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
| 704: |  |  |  |  |  |  |  |
| Chrishall------- | 0-17 | 10-20 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 17-60 | 5.0-10 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
| 710 : |  |  |  |  |  |  |  |
| Calaveras------- | 0-3 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 3-9 | 5.0-15 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 9-60 | 10-15 | 6.1-7.3 | 0 | 0 | 0 | 0 |

Table 19.--Chemical properties of the soils-Continued

| Map symbol and soil name | Depth | Cation exchange capacity | Soil | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| Palon- | 0-1 | 73-81 | 5.1-6.0 | 0 | 0 | 710: | 0 |
|  | 1-16 | 5.0-15 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 16-40 | 0.0-1.0 | 5.6-6.5 | 0 | 0 | 0 | 0 |
|  | 40-60 | 5.0-10 | 5.6-6.5 | 0 | 0 | 0 | 0 |
| 711: |  |  |  |  |  |  |  |
| Laventana- | 0-5 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 5-11 | 5.0-15 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 11-23 | 15-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
|  | 23-60 | 10-20 | 6.6-7.3 | 0 | 0 | 0 | 0 |
| 719 : |  |  |  |  |  |  |  |
| Alanos- | 0-1 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 1-7 | 10-30 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 7-27 | 20-35 | 6.6-7.3 | 0-2 | 0 | 0.0-2.0 | 0 |
|  | 27-39 | 15-20 | 7.4-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
|  | 39-60 | 10-15 | 7.4-7.8 | 0-5 | 0 | 0.0-2.0 | 0 |
| 802 : |  |  |  |  |  |  |  |
| Redondo--------- | 0-2 | 73-81 | 5.1-6.0 | 0 | 0 | 0.0-2.0 | 0 |
|  | 2-5 | 15-25 | 6.1-7.3 | 0 | 0 | 0.0-2.0 | 0 |
|  | 5-16 | 15-20 | 5.6-6.5 | 0 | 0 | 0.0-2.0 | 0 |
|  | 16-60 | 10-20 | 5.6-6.5 | 0 | 0 | 0.0-2.0 | 0 |
| 803 : |  |  |  |  |  |  |  |
| Rusbach--------- |  | 73-81 | 5.1-6.0 |  | 0 | 0.0-2.0 | 0 |
|  | 2-16 | 5.0-10 | 5.6-7.3 | 0 | 0 | 0 | 0 |
|  | 16-25 | 5.0-10 | 5.1-6.5 | 0 | 0 | 0 | 0 |
|  | 25-70 | 5.0-10 | 5.1-6.5 | 0 | 0 | 0 | 0 |

Table 19.--Chemical properties of the soils--Continued

| Map symbol and soil name | Depth | Cation exchange capacity | $\begin{gathered} \text { Soil } \\ \text { reaction } \end{gathered}$ | Calcium carbonate | Gypsum | Salinity | ```Sodium adsorp- tion ratio``` |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In. | meq/100 g | pH | Pct. | Pct. | mmhos/cm |  |
| DAM : |  |  |  |  |  |  |  |
| W: |  |  |  |  |  |  |  |
| Water---------- | --- | --- | --- | --- | --- | --- | --- |

## Table 20.--Water features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

| Map symbol and soil name | \| Hydro- <br> logic <br> group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
|  |  |  |  |  |  |  |  |
| Pinavetes-------- | A | Low | Jan-Dec | - | --- | --- | None |
| Florita- | A | Very low | Jan-Dec | --- | --- | --- | None |
| 10 : |  |  |  |  |  |  |  |
| Sparank------------ | D | Medium | March | --- | --- | --- | Rare |
|  |  |  | April | --- | --- | --- | Rare |
|  |  |  | May | --- | --- | --- | Rare |
|  |  |  | June | --- | --- | --- | Rare |
|  |  |  | July | --- | --- | --- | Rare |
|  |  |  | August | - | -- | --- | Rare |
| San Mateo---------- | C | Low | March | --- | --- | --- | Rare |
|  |  |  | April | --- | --- | --- | Rare |
|  |  |  | May | --- | --- | --- | Rare |
|  |  |  | June | --- | --- | --- | Rare |
|  |  |  | July | --- | --- | --- | Rare |
|  |  |  | August | --- | --- | --- | Rare |
| 11: |  |  |  |  |  |  |  |
| Fruitland-- | B | Very low | Jan-Dec | --- | --- | --- | None |
| 12 : |  |  |  |  |  |  |  |
| Pinavetes- | A | Very low | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | Hydro- <br> logic <br> group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
|  |  |  |  |  |  |  |  |
| Abiquiu- | B | Low | April | 2.0-4.0 | $>6.0$ | Long | Occasional |
|  |  |  | May | 2.0-4.0 | $>6.0$ | Long | Occasional |
|  |  |  | June | 2.0-4.0 | $>6.0$ | Long | Occasional |
| Peralta- | B | Low | March | 2.0-3.0 | $>6.0$ |  | None |
|  |  |  | April | $2.0-3.0$ | $>6.0$ | Long | Occasional |
|  |  |  | May | 2.0-3.0 | $>6.0$ | Long | Occasional |
|  |  |  | June | 2.0-3.0 | $>6.0$ | Long | Occasional |
|  |  |  | July | 2.0-3.0 | $>6.0$ | --- | None |
|  |  |  | August | 2.0-3.0 | $>6.0$ | -- | None |
|  |  |  | September | 2.0-3.0 | $>6.0$ | --- | None |
|  |  |  | October | 2.0-3.0 | $>6.0$ | -- | None |
| 20 : |  |  |  |  |  |  |  |
| Menefee- | D | Very high | Jan-Dec | --- | --- | -- | None |
| Vessilla- | D | High | Jan-Dec | --- | --- | --- | None |
| Rock outcrop-- | --- | --- | Jan-Dec | --- | --- | --- | None |
| Werlog------------- | C | Low | March | 2.0-3.5 | $>6.0$ | --- | Rare |
|  |  |  | April | 2.0-3.5 | $>6.0$ | --- | Rare |
|  |  |  | May | 2.0-3.5 | $>6.0$ | -- | Rare |
|  |  |  | June | 2.0-3.5 | $>6.0$ | --- | Rare |
|  |  |  | July | 2.0-3.5 | $>6.0$ | --- | Rare |
|  |  |  | August | 2.0-3.5 | $>6.0$ | --- | Rare |
|  |  |  | September | 2.0-3.5 | $>6.0$ | - | None |
|  |  |  | October | $2.0-3.5$ | $>6.0$ | --- | None |
|  |  |  | November | 2.0-3.5 | >6.0 | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | $\begin{aligned} & \text { \| Hydro- } \\ & \mid \text { logic } \\ & \text { \| group } \end{aligned}$ | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
| 22: ${ }^{\text {2 }}$ Ft. Ft. |  |  |  |  |  |  |  |
| Jocity- | C | Very low | Jan-Dec | --- | --- | --- | None |
| Gilco- | B | Low | Jan-Dec | --- | -- | --- | None |
| 23: |  |  |  |  |  |  |  |
| Gilco- | C | Low | Jan-Dec | -- | --- | --- | None |
| 24 : |  |  |  |  |  |  |  |
| Jocity- | C | Low | Jan-Dec | - | --- | - | None |
| 30: |  |  |  |  |  |  |  |
| San Mateo---------- | C | Low | March | --- | --- | --- | Rare |
|  |  |  | April | --- | --- | --- | Rare |
|  |  |  | May | --- | --- | --- | Rare |
|  |  |  | June | --- | -- | --- | Rare |
|  |  |  | July | --- | --- | -- | Rare |
|  |  |  | August | --- | --- | - | Rare |
| 31: |  |  |  |  |  |  |  |
| Gobernador- | D | Medium | Jan-Dec | --- | - | -- | None |
| Orlie- | C | Medium | Jan-Dec | - | -- | --- | None |
| 34: |  |  |  |  |  |  |  |
| Alcalde----------- | D | Medium | March | --- | --- | - | Rare |
|  |  |  | April | -- | --- | --- | Rare |
|  |  |  | May | -- | --- | --- | Rare |
|  |  |  | June | --- | --- | - | Rare |
|  |  |  | July | -- | --- | - | Rare |
|  |  |  | August | --- | --- | --- | Rare |
|  |  |  |  |  |  |  |  |

Table 20.--Water features--Continued


Table 20.--Water features--Continued

| Map symbol and soil name | Hydro- <br> logic <br> group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
| 60 : |  |  |  | Ft. | Ft. |  |  |
| Sparham----------- | D | Medium | March | 4.0-5.0 | $>6.0$ | - | Rare |
|  |  |  | April | 4.0-5.0 | $>6.0$ | --- | Rare |
|  |  |  | May | 4.0-5.0 | $>6.0$ | --- | Rare |
|  |  |  | June | 4.0-5.0 | >6.0 | --- | Rare |
|  |  |  | July | 4.0-5.0 | $>6.0$ | --- | Rare |
|  |  |  | August | 4.0-5.0 | $>6.0$ | - | Rare |
|  |  |  | September | 4.0-5.0 | $>6.0$ | --- | None |
|  |  |  | October | 4.0-5.0 | $>6.0$ | -- | None |
| 61: |  |  |  |  |  |  |  |
| Colomex- | B | Low | Jan-Dec | --- | --- | -- | None |
| 64 : |  |  |  |  |  |  |  |
| Dula | B | High | April | 1.0-1.7 | >6.0 | Long | Frequent |
|  |  |  | May | 1.0-1.7 | $>6.0$ | Long | Frequent |
|  |  |  | June | 1.0-1.7 | $>6.0$ | Long | Frequent |
|  |  |  | July | 1.0-1.7 | $>6.0$ | Long | Frequent |
|  |  |  | August | $1.0-1.7$ | >6.0 | Long | Frequent |
| 65 : |  |  |  |  |  |  |  |
| Doslomas- | C | Low | Jan-Dec | --- | --- | --- | None |
| 66: |  |  |  |  |  |  |  |
| Encicado----------- | C | Low |  |  |  |  |  |
|  |  |  | April | --- | --- | Long | Occasional |
|  |  |  | May | --- | --- | Long | Occasional |
| 69 : |  |  |  |  |  |  |  |
| Lindrith----- | C | Medium | Jan-Dec | -- | --- | --- | None |
| Royosa- | A | Very low | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | Hydro- <br> logic <br> group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
| 70: \| ${ }^{\text {a }}$ ( ${ }^{\text {a }}$ |  |  |  |  |  |  |  |
| Sparham- | D | Medium | March | --- | --- | --- | Rare |
|  |  |  | April | --- | --- | --- | Rare |
|  |  |  | May | --- | --- | --- | Rare |
|  |  |  | June | --- | -- | --- | Rare |
|  |  |  | July | --- | --- | --- | Rare |
|  |  |  | August | --- | --- | --- | Rare |
| 80 : |  |  |  |  |  |  |  |
| Orlie- | C | Medium | Jan-Dec | --- | --- | -- | None |
| Nalivag- | C | Medium | Jan-Dec | --- | --- | --- | None |
| 102: |  |  |  |  |  |  |  |
| Menefee- | D | High | Jan-Dec | --- | --- | --- | None |
| Nalivag- | C | Medium | Jan-Dec | --- | --- | - | None |
| 103: |  |  |  |  |  |  |  |
| Orlie- | C | Medium | Jan-Dec | -- | -- | --- | None |
| 106: |  |  |  |  |  |  |  |
| Amal | C | Medium | Jan-Dec | - | - | --- | None |
| 107: |  |  |  |  |  |  |  |
| Berryman- | D | High | Jan-Dec | - | --- | --- | None |
| Ruson- | D | Medium | Jan-Dec | --- | --- | --- | None |
| 108: |  |  |  |  |  |  |  |
| Peney | D | High | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | Hydro- <br> logic <br> group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper limit | Lower <br> limit | Duration | Frequency |
| 108 : |  |  |  | Ft. | Ft. |  |  |
| Ransect- | C | Low | Jan-Dec | --- | --- | -- | None |
| 109: |  |  |  |  |  |  |  |
| Calendar- | D | High | Jan-Dec | --- | --- | --- | None |
| 110: |  |  |  |  |  |  |  |
| Vessilla-- | D | Medium | Jan-Dec | --- | --- | --- | None |
| Menefee- | D | High | Jan-Dec | --- | --- | -- | None |
| Orlie- | C | Medium | Jan-Dec | --- | --- | --- | None |
| 113: |  |  |  |  |  |  |  |
| Teromote- | C | Medium | Jan-Dec | --- | --- | -- | None |
| Ruson- | D | Medium | Jan-Dec | - | - | --- | None |
| 115 : |  |  |  |  |  |  |  |
| Menefee- | D | High | Jan-Dec | --- | --- | --- | None |
| 117: |  |  |  |  |  |  |  |
| Chamita------------ | C | High | March | 0.0-3.0 | >6.0 | --- | None |
|  |  |  | April | 0.0-3.0\| | $>6.0$ | Long | Frequent |
|  |  |  | May | 0.0-3.0 | >6.0 | Long | Frequent |
|  |  |  | June | \|0.0-3.0| | >6.0 | --- | None |
| 118 : |  |  |  |  |  |  |  |
| Hesperus----------- | C | Low | Jan-Dec | --- | --- | --- | None |
| Pastorius----- | B | Low | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | Hydrologic group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
| 118: |  |  |  | Ft. | Ft. |  |  |
|  | C | High | March | 0.0-3.0 | $>6.0$ | - | None |
|  |  |  | April | 0.0-3.0 | $>6.0$ | Long | Frequent |
|  |  |  | May | 0.0-3.0 | $>6.0$ | Long | Frequent |
|  |  |  | June | 0.0-3.0 | $>6.0$ | -- | None |
| 119 : |  |  |  |  |  |  |  |
| Roques - | D | High | Jan-Dec | --- | --- | --- | None |
| Nusmag | D | Medium | March | 3.5-6.0 | $>6.0$ | --- | None |
|  |  |  | April | 3.5-6.0 | $>6.0$ | --- | None |
|  |  |  | May | 3.5-6.0 | $>6.0$ | -- | None |
|  |  |  | June | 3.5-6.0 | $>6.0$ | --- | None |
| $125:$ |  |  |  |  |  |  |  |
| Hogg- | D | High | Jan-Dec | --- | --- | --- | None |
| Mara- | C | Medium | Jan-Dec | - | --- | -- | None |
| 127: |  |  |  |  |  |  |  |
| Rombo- | D | Medium | Jan-Dec | --- | --- | --- | None |
| Wiggler- | D | High | Jan-Dec | - | --- | --- | None |
| 129 : |  |  |  |  |  |  |  |
| Nusmag | D | Medium | March | 3.5-6.0 | $>6.0$ | --- | None |
|  |  |  | April | 3.5-6.0 | $>6.0$ | --- | None |
|  |  |  | May | 3.5-6.0 | $>6.0$ | --- | None |
|  |  |  | June | \|3.5-6.0 | >6.0 | --- | None |
|  |  |  |  |  |  |  |  |

Table 20.--Water features--Continued

| Map symbol and soil name | $\begin{aligned} & \text { \| Hydro- } \\ & \mid \text { logic } \\ & \text { \| group } \end{aligned}$ | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower limit | Duration | Frequency |
| 129:Tottl |  |  |  | Ft. | Ft. |  |  |
|  | D | High | \|April | 0.5-3.0\| | >6.0 | --- | None |
|  |  |  | \| May | 0.5-3.0 | >6.0 | --- | None |
|  |  |  | \| June | 0.5-3.0\| | >6.0 | --- | None |
|  |  |  | \|July | 3.0-3.5 | >6.0 | -- | None |
|  |  |  | \|August | 3.0-3.5 | >6.0 | --- | None |
|  |  |  | \| September | 3.0-3.5\| |  | -- |  |
| 130 : |  |  |  |  |  |  |  |
| Topetaul- | D | High | Jan-Dec | --- | --- | - | None |
| Hogg- | D | High | Jan-Dec | --- | --- | -- | None |
| 132 : |  |  |  |  |  |  |  |
| Stout- | D | Medium | Jan-Dec | --- | --- | --- | None |
| Carjo- | D | High | Jan-Dec | --- | --- | --- | None |
| Rock outcrop- | D | --- | Jan-Dec | --- | --- | --- | None |
| 133 : |  |  |  |  |  |  |  |
| Carrick- | D | Medium | Jan-Dec | --- | --- | --- | None |
| 136: |  |  |  |  |  |  |  |
| Elpedro---------- | C | Low | Jan-Dec | - | --- | --- | None |
| 137: |  |  |  |  |  |  |  |
| Yata- | D | High | Jan-Dec | --- | --- | --- | None |
| Eody- | D | Very high | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | \| Hydro- <br> logic <br> group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
|  |  |  |  | Ft. | Ft. |  |  |
| Espiritu- | B | High | Jan-Dec |  |  | -- | None |
| Wauquie- | B | High | Jan-Dec | --- | --- | --- | None |
| 141: |  |  |  |  |  |  |  |
| Capillo- | D | High | Jan-Dec | --- | --- | --- | None |
| Carjo- | D | High | Jan-Dec | - | --- | --- | None |
| Vamer- | D | High | Jan-Dec | -- | --- | --- | None |
| 142 : |  |  |  |  |  |  |  |
| Pinavetes- | A | Low | Jan-Dec | - | -- | --- | None |
| 145 : |  |  |  |  |  |  |  |
| Dermala- | C | High | Jan-Dec | --- | --- | --- | None |
| Rosced- | A | Medium | Jan-Dec | - | -- | -- | None |
| 146 : |  |  |  |  |  |  |  |
| Parida- | B | Medium | Jan-Dec | - | - | --- | None |
| Palacid- | C | High | Jan-Dec | - | -- | - | None |
| 147: |  |  |  |  |  |  |  |
| Dermala- | B | High | Jan-Dec | - | - | --- | None |
| Chimayo- | D | High | Jan-Dec | --- | --- | --- | None |
| 148 : |  |  |  |  |  |  |  |
| Chita- | C | Low | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | $\begin{aligned} & \text { \| Hydro- } \\ & \mid \text { logic } \\ & \text { \| group } \end{aligned}$ | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\begin{aligned} & \text { Upper } \\ & \text { limit } \end{aligned}$ | Lower <br> limit | Duration | Frequency |
|  |  |  |  | Ft. | Ft. |  |  |
| Yarts | B | Very low | Jan-Dec | --- | --- | --- | None |
| 151: |  |  |  |  |  |  |  |
| Razito- | A | Very low | Jan-Dec | --- | --- | --- | None |
| Fruitland- | B | Very low | Jan-Dec | -- | --- | -- | None |
| 170: |  |  |  |  |  |  |  |
| Sedillo- | C | Low | Jan-Dec | --- | --- | -- | None |
| 173: |  |  |  |  |  |  |  |
| Oelop- | C | Low | Jan-Dec | - | --- | --- | None |
| 180: |  |  |  |  |  |  |  |
| Oelop- | C | Low | Jan-Dec | --- | --- | - | None |
| 182: |  |  |  |  |  |  |  |
| Oelop- | C | Medium | Jan-Dec | - | - | --- | None |
| 190: |  |  |  |  |  |  |  |
| Sedillo- | C | Low | Jan-Dec | --- | -- | --- | None |
| 200: |  |  |  |  |  |  |  |
| Katlon- | D | High | Jan-Dec | --- | --- | --- | None |
| 201: |  |  |  |  |  |  |  |
| Lobat | C | High | Jan-Dec | -- | --- | --- | None |
| Abreu- | C | High | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | Hydrologic group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
| 203: |  |  |  | Ft. | Ft. |  |  |
| Nabor | D | Very high | Jan-Dec | --- | --- | --- | None |
| Elbuck- | C | Medium | Jan-Dec | --- | --- | - | None |
| 206: |  |  |  |  |  |  |  |
| Angostura | C | High | Jan-Dec | --- | --- | --- | None |
| Gromes- | C | High | Jan-Dec | - | --- | - | None |
| 207: |  |  |  |  |  |  |  |
| Gromes- | C | High | Jan-Dec | --- | --- | - | None |
| Rock outcrop- | D | --- | Jan-Dec | - | - | -- | None |
| 208: |  |  |  |  |  |  |  |
| Ess | B | Medium | Jan-Dec | - | - | - | None |
| Croftshaw- | C | Medium | Jan-Dec | - | - | --- | None |
| 209 : |  |  |  |  |  |  |  |
| Crubas - | D | High | January | 0.0-1.7 | $>6.0$ | -- | None |
|  |  |  | February | 0.0-1.7 | $>6.0$ | --- | None |
|  |  |  | March | 0.0-1.7 | $>6.0$ | Long | Frequent |
|  |  |  | April | 0.0-1.7 | $>6.0$ | Long | Frequent |
|  |  |  | May | 0.0-1.7 | >6.0 | Long | Frequent |
|  |  |  | June | 0.0-1.7 | >6.0 | Long | Frequent |
|  |  |  | July | 0.0-1.7 | $>6.0$ | --- | None |
|  |  |  | December | 0.0-1.7 | >6.0 | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | \| Hydro- <br> logic <br> group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
|  |  |  |  |  |  |  |  |
| Bywell | D | High | January | \|0.0-2.5| | $>6.0$ | --- | None |
|  |  |  | February | \|0.0-2.5| | $>6.0$ | -- | None |
|  |  |  | March | \|0.0-2.5| | $>6.0$ | --- | None |
|  |  |  | April | \|0.0-2.5| | $>6.0$ | --- | None |
|  |  |  | May | \|0.0-2.5| | $>6.0$ | --- | None |
|  |  |  | June | \|0.0-2.5| | >6.0 | Long | Frequent |
|  |  |  | July | \|0.0-2.5| | $>6.0$ | Long | Frequent |
|  |  |  | December | \|0.0-2.5| | >6.0 | --- | None |
| Croftshaw--- | C | Medium | Jan-Dec | --- | -- | --- | None |
| 210: |  |  |  |  |  |  |  |
| Rock outcrop- | D | --- | Jan-Dec | - | - | --- | None |
| Bracos- | C | High | Jan-Dec | - | - | --- | None |
| $211:$ |  |  |  |  |  |  |  |
| Angostura- | B | High | Jan-Dec | - | --- | -- | None |
| 214 : |  |  |  |  |  |  |  |
| Quimera- | D | Very high | Jan-Dec | --- | --- | -- | None |
| Vamer- | D | Very high | Jan-Dec | --- | --- | --- | None |
| 215: |  |  |  |  |  |  |  |
| Saragote- | D | Medium |  |  |  |  |  |
|  |  |  | February | \|2.0-3.5| | $>6.0$ | - | None |
|  |  |  | March | \|2.0-3.5| | $>6.0$ | --- | None |
|  |  |  | April | \|2.0-3.5| | $>6.0$ | -- | None |
|  |  |  | May | \|2.0-3.5| | $>6.0$ | -- | None |
|  |  |  | June | \|2.0-3.5| | >6.0 | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | Hydrologic group | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
| 215: |  |  |  | Ft. | Ft. |  |  |
| Ess | B | Medium | Jan-Dec | --- | --- | -- | None |
| 216 : |  |  |  |  |  |  |  |
| Angostura | B | High | Jan-Dec | - | --- | - | None |
| 220: |  |  |  |  |  |  |  |
| Rock outcrop- | D | - | Jan-Dec | -- | --- | --- | None |
| Vessilla- | D | High | Jan-Dec | --- | --- | --- | None |
| Menefee | D | Very high | Jan-Dec | -- | --- | -- | None |
| 228 : |  |  |  |  |  |  |  |
| Suposo- | D | Medium | Jan-Dec | - | --- | --- | None |
| Brycan- | B | Low | May | --- | --- | Very brief | Occasional |
|  |  |  | June | --- | --- | Very brief | Occasional |
|  |  |  | July | --- | --- | Very brief | Occasional |
| 230: |  |  |  |  |  |  |  |
| Badland- | D | Very high | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued


Table 20.--Water features--Continued

| Map symbol and soil name | $\begin{aligned} & \text { \| Hydro- } \\ & \mid \text { logic } \\ & \text { \| group } \end{aligned}$ | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper limit | Lower <br> limit | Duration | Frequency |
| 245: 2 $^{\text {a }}$ ( Ft. ${ }^{\text {Ft. }}$ |  |  |  |  |  |  |  |
| Maia- | C | Low | Jan-Dec | -- | --- | --- | None |
| Manzano- | B | Low | July | --- | -- | Brief | Occasional |
|  |  |  | August | --- | --- | Brief | Occasional |
| 246: |  |  |  |  |  |  |  |
| Pena- | A | Low | Jan-Dec | --- | - | --- | None |
| 247: |  |  |  |  |  |  |  |
| Wenota- | D | Medium | June | --- | --- | Brief | Occasional |
|  |  |  | July | --- | --- | Brief | Occasional |
|  |  |  | August | -- | -- | Brief | Occasional |
|  |  |  | September | --- | --- | Brief | Occasional |
| 248: |  |  |  |  |  |  |  |
| Hagerman- | C | Low | Jan-Dec | --- | --- | --- | None |
| Silver- | D | High | Jan-Dec | --- | -- | --- | None |
| 249 : |  |  |  |  |  |  |  |
| Losmarios- | D | Very high | Jan-Dec | --- | --- | --- | None |
| 302: |  |  |  |  |  |  |  |
| Puye- | D | High | Jan-Dec | --- | -- | --- | None |
| 401: |  |  |  |  |  |  |  |
| Chiminet- | D | High | Jan-Dec | - | -- | --- | None |
| Rock outcrop-- | D | --- | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | $\begin{aligned} & \text { \| Hydro- } \\ & \mid \text { logic } \\ & \text { \| group } \end{aligned}$ | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper <br> limit | Lower <br> limit | Duration | Frequency |
| 407: |  |  |  | Ft. | Ft. |  |  |
| Totavi | B | Medium | Jan-Dec | -- | --- | --- | None |
| 704 : |  |  |  |  |  |  |  |
| Chrishall- | B | Low | April | --- | --- | Very brief | Occasional |
|  |  |  | May | --- | --- | Very brief | Occasional |
|  |  |  | June | --- | --- | Very brief | Occasional |
|  |  |  | July | --- | --- | Very brief | Occasional |
|  |  |  | August | --- | --- | Very brief | Occasional |
|  |  |  | September | --- | --- | Very brief | Occasional |
|  |  |  | October | --- | --- | Very brief | Occasional |
| 710: |  |  |  |  |  |  |  |
| Calaveras-- | B | High | Jan-Dec | --- | --- | --- | None |
| Palon- | A | Medium | Jan-Dec | -- | -- | -- | None |
| 711: |  |  |  |  |  |  |  |
| Laventana- | B | High | Jan-Dec | --- | -- | --- | None |
| 719 : |  |  |  |  |  |  |  |
| Alanos- | D | Very high | Jan-Dec | --- | -- | - | None |
| 802 : |  |  |  |  |  |  |  |
| Redondo- | B | Medium | Jan-Dec | --- | --- | -- | None |
| 803 : |  |  |  |  |  |  |  |
| Rusbach- | A | Medium | Jan-Dec | --- | -- | --- | None |
| DAM: |  |  | Jan-Dec | --- | --- | --- | None |

Table 20.--Water features--Continued

| Map symbol and soil name | $\begin{aligned} & \text { \| Hydro- } \\ & \mid \text { logic } \\ & \text { \| group } \end{aligned}$ | Surface runoff | Month | Water table |  | Flooding |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Upper limit | Lower <br> limit | Duration | Frequency |
| W: Water- | --- | --- | Jan-Dec | Ft. - - - | Ft. - - - | --- | None |

## Table 21.--Soil features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

| Map symbol and soil name | Restrictive layer |  | $\begin{array}{\|c\|} \text { Potential } \\ \text { for } \\ \text { frost action } \end{array}$ | Risk of corrosion |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Kind | Depth to top |  | ```Uncoated steel``` | Concrete |
|  |  |  |  |  |  |
| Pinavetes-------- | - | --- | Low | Moderate | Low |
| Florita---------- | --- | --- | Low | High | Low |
| 10: |  |  |  |  |  |
| Sparank--------- | --- | --- | Low | High | Low |
| San Mateo-------- | --- | --- | Low | High | Low |
| 11: |  |  |  |  |  |
| Fruitland------ | --- | --- | Low | High | Low |
| 12: |  |  |  |  |  |
| Pinavetes-------- | --- | --- | Low | Moderate | Low |
| 18: |  |  |  |  |  |
| Abiquiu--------- | --- | - | Low | High | Low |
| Peralta---------- | --- | - | Low | High | Moderate |
| 20: |  |  |  |  |  |
| Menefee-------- | Paralithic bedrock | 10-20 | Moderate | High | Moderate |
| Vessilla--------- | Lithic bedrock | 10-20 | Low | High | Low |
| Rock outcrop----- | Lithic bedrock | 0-0 | --- | -- | --- |
| 21: |  |  |  |  |  |
| Werlog----------- | --- | --- | Low | High | Low |

Table 21.--Soil features--Continued

| Map symbol and soil name | Restrictive layer |  | Potentialforfrost action | Risk of corrosion |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Kind | Depth to top |  | ```Uncoated steel``` | Concrete |
|  |  | In. |  |  |  |
| 22 : |  |  |  |  |  |
| Jocity-- | --- | --- | Low | High | Low |
| Gilco------------ | --- | --- | Low | High | Low |
| 23 : |  |  |  |  |  |
| Gilco---------- | - | --- | Low | High | Low |
| 24: |  |  |  |  |  |
| Jocity--------- | - | --- | Low | High | Low |
| 30: |  |  |  |  |  |
| San Mateo------ | --- | --- | Low | High | Low |
| 31: |  |  |  |  |  |
| Gobernador------- | --- | - | Low | High | Moderate |
| Orlie----------- | - | --- | Moderate | High | Low |
| 34: |  |  |  |  |  |
| Alcalde--------- | - | - | Low | High | \| High |
| 39: |  |  |  |  |  |
| Fruitland------- | - | - | Low | High | Low |
| 40 : |  |  |  |  |  |
| Pinitos--------- | --- | --- | Moderate | Moderate | Low |
| Menefee-- | Paralithic bedrock | 10-20 | Moderate | High | Moderate |
| Vessilla- | Lithic bedrock | 10-20 | Low | High | Low |

Table 21.--Soil features--Continued


Table 21.--Soil features--Continued


Table 21.--Soil features--Continued


Table 21.--Soil features--Continued


Table 21.--Soil features--Continued

| Map symbol and soil name | Restrictive layer |  | Potentialforfrost action | Risk of corrosion |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Kind | $\begin{array}{\|} \text { Depth } \\ \text { \|o top } \end{array}$ |  | ```Uncoated steel``` | Concrete |
|  |  | In. |  |  |  |
| Eody--- | --- | --- | Moderate | Moderate | Low |
| 140 : |  |  |  |  |  |
| Espiritu-------- | --- | --- | Moderate | Low | Low |
| Wauquie--------- | --- | --- | Moderate | Moderate | Low |
| 141: |  |  |  |  |  |
| Capillo--------- | --- | --- | Low | Moderate | Low |
| Carjo- | Lithic bedrock | 20-40 | Moderate | Moderate | Low |
| Vamer--- | Lithic bedrock | 10-20 | Moderate | Moderate | Low |
| 142 : |  |  |  |  |  |
| Pinavetes--- | --- | --- | Low | Moderate | Low |
| 145 : |  |  |  |  |  |
| Dermala-------- | --- | - | Moderate | Moderate | Low |
| Rosced--------- | - | --- | Moderate | Low | Low |
| 146 : |  |  |  |  |  |
| Parida--------- | - | - | Low | Low | Low |
| Palacid---------- | --- | --- | Low | Moderate | Low |
| 147 : |  |  |  |  |  |
| Dermala---------- | --- | --- | Moderate | Moderate | Low |
| Chimayo-------- | Lithic bedrock | 10-20 | Low | Low | Low |

Table 21.--Soil features--Continued


Table 21.--Soil features--Continued


Table 21.--Soil features--Continued

| Map symbol and soil name | Restrictive layer |  | Potentialforfrost action | Risk of corrosion |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Kind | $\begin{aligned} & \text { Depth } \\ & \text { to top } \end{aligned}$ |  | Uncoated steel | Concrete |
|  |  | In. |  |  |  |
| Angostura------------- | --- | --- | Moderate | Moderate | Moderate |
| 214: |  |  |  |  |  |
| Quimera-------------- | Lithic bedrock | 10-20 | Low | High | Low |
| Vamer------------------ | Lithic bedrock | 10-20 | Moderate | Moderate | Low |
| 215: |  |  |  |  |  |
| Saragote------------- | --- | -- | High | High | Moderate |
| Ess------------------- | --- | --- | Moderate | Moderate | \| Moderate |
| 216: |  |  |  |  |  |
| Angostura------------ | --- | --- | Moderate | Moderate | Moderate |
| $220:$ |  |  |  |  |  |
| Rock outcrop---------- | Lithic bedrock | 0-0 | --- | --- | --- |
| Vessilla-------------- | Lithic bedrock | 10-20 | Low | High | Low |
| Menefee--------------- | Paralithic bedrock | 10-20 | Moderate | High | Moderate |
| 228: |  |  |  |  |  |
|  | - | --- | Moderate | High | Low |
| Brycan--------------- | --- | -- | Moderate | High | Moderate |
| $230:$ |  |  |  |  |  |
| Badland | Paralithic bedrock | 0-0 | None | High | Low |
| 240: |  |  |  |  |  |
| Riverwash, gravelly---- | --- | --- | --- | --- | --- |

Table 21.--Soil features--Continued

| Map symbol and soil name | Restrictive layer |  | $\left\lvert\, \begin{gathered} \text { Potential } \\ \text { for } \\ \text { frost action } \end{gathered}\right.$ | Risk of corrosion |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Kind | $\begin{aligned} & \text { Depth } \\ & \text { to top } \end{aligned}$ |  | Uncoated steel | Concrete |
|  |  | In. |  |  |  |
| 241: |  |  |  |  |  |
| Florita-------- | --- | --- | Low | High | Low |
| Rock outcrop--- | Lithic bedrock | 0-0 | --- | --- | -- |
| 242: |  |  |  |  |  |
| Tinaja--------- | --- | --- | Low | Low | Low |
| Rock outcrop-- | Lithic bedrock | 0-0 | -- | --- | --- |
| 243: |  |  |  |  |  |
| Penistaja------- | - | - | --- | High | Low |
| 244: |  |  |  |  |  |
| Scholle----- | --- | --- | Low | High | Low |
| Silver---------- | --- | - | Low | \| High | Low |
| 245 : |  |  |  |  |  |
| Maia--------- | - | --- | Moderate | High | Low |
| Manzano------ | - | - | Moderate | Moderate | Low |
| 246: |  |  |  |  |  |
| Pena----------- | --- | - | Moderate | High | Low |
| 247: |  |  |  |  |  |
| Wenota---------- | - | -- | Low | High | Low |
| 248: |  |  |  |  |  |
| Hagerman------ | Lithic bedrock | 20-40 | Low | High | Low |
| Silver---------- | - | --- | Low | High | Low |

Table 21.--Soil features--Continued


Table 21.--Soil features--Continued

| Map symbol and soil name | Restrictive layer |  | $\begin{array}{\|c\|} \text { Potential } \\ \text { for } \\ \text { frost action } \end{array}$ | Risk of corrosion |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Kind | $\begin{array}{\|} \text { Depth } \\ \text { to top } \end{array}$ |  | Uncoated steel | Concrete |
|  |  | In. |  |  |  |
| Dam------------ | --- | --- | --- | --- | --- |
| W: |  |  |  |  |  |
| Water----------- | --- | --- | --- | --- | --- |

(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 |
| :---: | :---: |
| Abiquiu-------- | Sandy-skeletal, mixed, mesic Typic Ustifluvents |
| Abreu- | \|Loamy-skeletal, mixed Typic Eutroboralfs |
| Alanos--------- | \| Clayey-skeletal, mixed Typic Eutroboralfs |
| Alcalde------- | \|Fine, mixed, calcareous, mesic Vertic Torriorthents |
| Amal---------- | \|Fine-silty, mixed, mesic Aridic Haplustalfs |
| Angostura------- | Loamy-skeletal, mixed Typic Cryoboralfs |
| Berryman------- | \|Fine-loamy, carbonatic, mesic Aridic Ustochrepts |
| Bracos--------- | Loamy-skeletal, mixed, nonacid Typic Cryorthents |
| Brycan--------- | Fine-loamy, mixed Cumulic Haploborolls |
| Bywell--------- | Loamy-skeletal, mixed Typic Cryaquolls |
| Calaveras------ | \|Loamy-skeletal, mixed, frigid Dystric Eutrochrepts |
| Calendar-------- | \|Fine, mixed, mesic Aridic Ustochrepts |
| Capillo-------- | Fine, mixed Typic Argiborolls |
| Carjo---------- | \|Fine, mixed Mollic Eutroboralfs |
| Carrick-------- | Fine, mixed Typic Eutroboralfs |
| Chamita--------- | \|Fine-loamy, mixed, frigid Cumulic Haplaquolls |
| Chimayo-------- | Loamy-skeletal, mixed, nonacid, mesic Lithic Ustorthents |
| Chiminet------- | Loamy, mixed, nonacid, mesic, shallow Typic Ustorthents |
| Chita---------- | \|Fine-silty, mixed, mesic Aridic Haplustalfs |
| Chrishall------- | \| Coarse-loamy, mixed Pachic Haploborolls |
| Colomex--------- | Loamy-skeletal, mixed Mollic Eutroboralfs |
| Croftshaw------ | Fine-loamy, mixed Argic Cryoborolls |
| Crubas--------- | Fine, mixed Typic Cryaquolls |
| Dermala-------- | \|Fine-loamy, mixed, mesic Aridic Haplustalfs |
| Doslomas---- | \| Clayey over sandy or sandy-skeletal, mixed Typic Argiborolls |
| Dula-------- | \|Fine-loamy over sandy or sandy-skeletal, mixed, frigid Cumulic Haplaquolls |
| Elbuck--------- | \|Fine-loamy, mixed Typic Eutroboralfs |
| Elpedro--------- | \|Fine-silty, mixed, mesic Aridic Haplustalfs |
| Encicado------- | Fine, mixed Pachic Udic Argiborolls |
| Eody--- | \|Fine, mixed, nonacid Typic Cryorthents |
| Espiritu- | \|Loamy-skeletal, mixed, mesic Aridic Haplustalfs |
| Ess- | \|Loamy-skeletal, mixed Argic Cryoborolls |
|  |  |

Table 22.--Taxonomic classification of the soils--Continued


Table 22.--Taxonomic classification of the soils--Continued

| Soil name | Family or higher taxonomic class |
| :---: | :---: |
| Quimera | Clayey, mixed, calcareous, frigid Lithic Ustorthents |
| Ransect | Fine-loamy, carbonatic, mesic Aridic Ustochrepts |
| Razito | Mixed, mesic Typic Torripsamments |
| Redondo | Loamy-skeletal, mixed Typic Cryoboralfs |
| Rombo------- | Fine, mixed, frigid Typic Ustochrepts |
| Roques | Fine, mixed, frigid Typic Ustochrepts |
| Rosced- | Loamy-skeletal, mixed, mesic Aridic Ustochrepts |
| Royosa | Mixed, mesic Typic Ustipsamments |
| Rusbach | Sandy-skeletal, mixed Typic Cryorthents |
| Ruson | Fine, mixed, calcareous, mesic Typic Ustorthents |
| San Mateo- | Fine-loamy, mixed, calcareous, mesic Ustic Torrifluvents |
| Saragote | Clayey-skeletal, mixed Argiaquic Cryoborolls |
| Scholle- | Fine-loamy, mixed, mesic Ustollic Haplargids |
| Sedillo | Loamy-skeletal, mixed, mesic Ustollic Haplargids |
| Silver | Fine, mixed, mesic Ustollic Haplargids |
| Sparank | Fine, mixed, calcareous, mesic Ustic Torrifluvents |
| Sparham | Fine, mixed, calcareous, mesic Typic Ustifluvents |
| Stout | Loamy, mixed, nonacid, frigid Lithic Ustorthents |
| Suposo | Fine, mixed Pachic Argiborolls |
| Teromote | Fine-loamy, mixed, mesic Aridic Ustochrepts |
| Tinaja | Loamy-skeletal, mixed, mesic Aridic Ustochrepts |
| Topetaul | Clayey-skeletal, mixed Mollic Eutroboralfs |
| Totav | Ashy, frigid Mollic Vitrandepts |
| Tottl | Fine, mixed, calcareous, frigid Cumulic Haplaquolls |
| Vamer | Clayey, mixed Lithic Eutroboralfs |
| Vessill | Loamy, mixed, calcareous, mesic Lithic Ustorthents |
| Walrees | Fine-loamy over sandy or sandy-skeletal, mixed, calcareous, mesic Aquic Ustifluvents |
| Wauquie | Loamy-skeletal, mixed, mesic Aridic Haplustalfs |
| Wenota | Fine, mixed, calcareous, mesic Ustic Torrifluvents |
| Werlog- | Fine-loamy, mixed, calcareous, mesic Aquic Ustifluvents |
| Wiggler | Loamy, mixed, calcareous, frigid, shallow Typic Ustorthents |
| Yart | Coarse-loamy, mixed, calcareous, mesic Ustic Torriorthents |
| Yat | Clayey-skeletal, mixed Argic Pachic Cryoborolls |

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